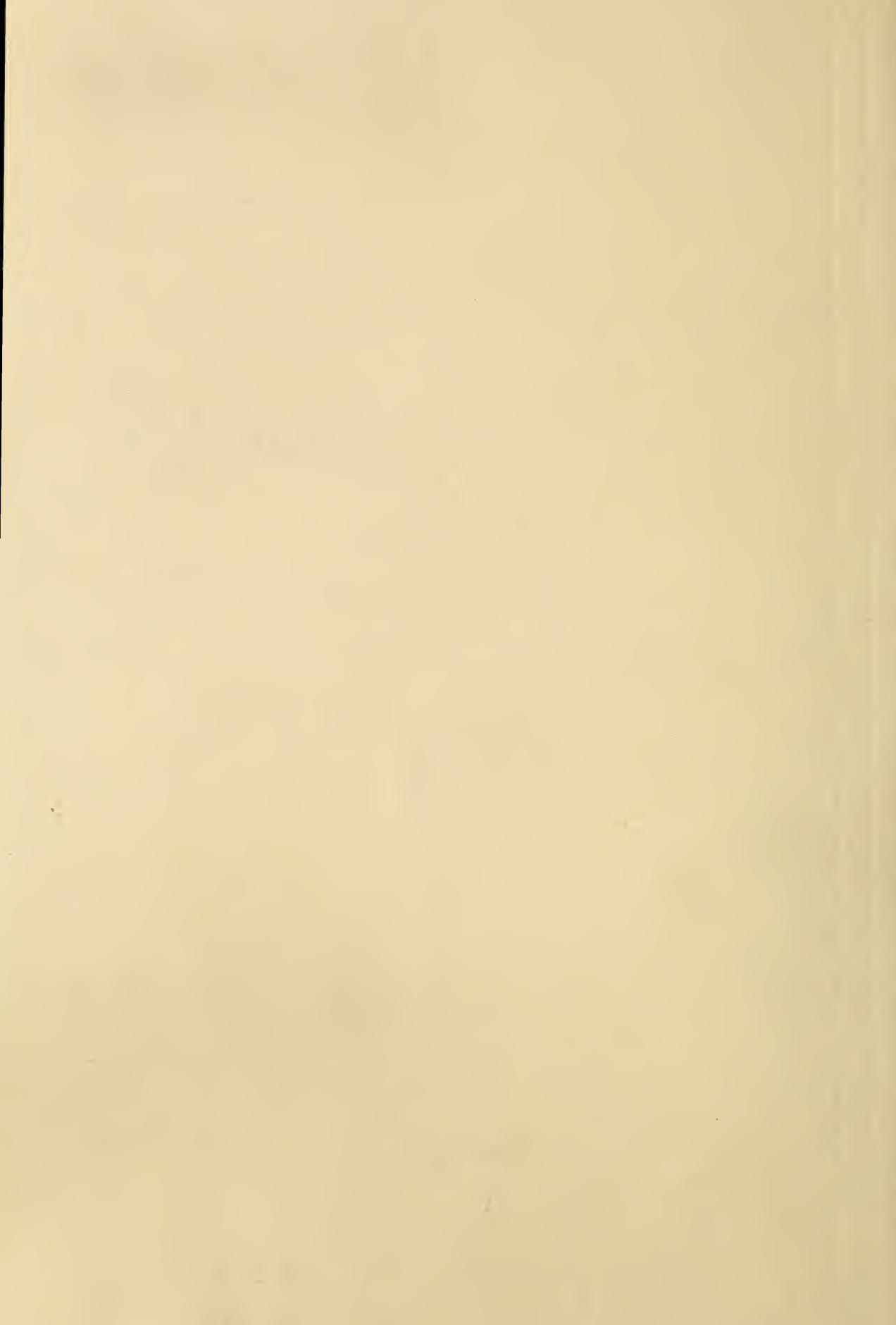


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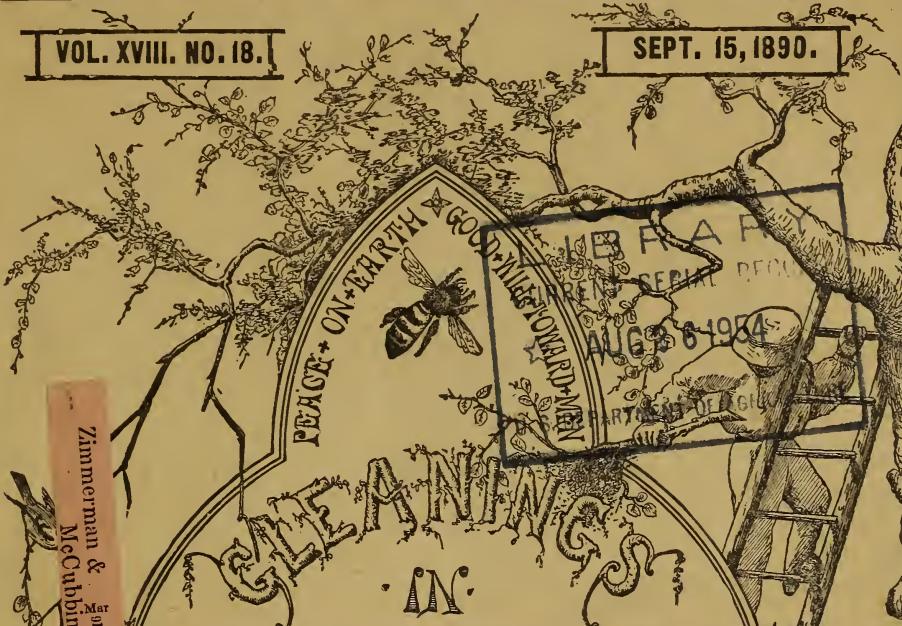
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VOL. XVIII. NO. 18.

SEPT. 15, 1890.



BEE CULTURE

DEVOTED
TO
BEEKEEPING
& HOME INTERESTS.

MEDINA, OHIO
BY
A. ROOT

TERMS, ONE DOLLAR PER YEAR.

PRINTED BY THE BURLINGAME PRESS, BURLINGAME, CALIF.

ENTERED AT THE POSTOFFICE, MEDINA, OHIO, AS SECOND-CLASS MATTER

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CONVENTION NOTICES.

The Southwestern Wisconsin Bee-keepers' Affiliated Association will meet Oct. 8, 1890, in Platteville, Wis., at the residence of E. France, to commence punctually at 10 A.M., sharp. There will be a large turnout of prominent bee-keepers of the State. A question-box, free to all, in which any subject you wish discussed can be presented and answered. Let every one be on hand and bring in his report for 1890, starting at spring count, or May 1. There will be blanks sent to each member for this purpose, in due time, by the secretary.

The following is the programme:—
1. Opening—Rev. E. S. Snell, Orion, Wisconsin.
Artificial Swarming, E. France, Platteville.
Natural Swarming, G. O. Miller, Bo-cobel.
Comb Foundation, Benj. E. Rice, Bo-cobel.
Best Way for Hives to Face, B. Bartholomew, Bo-cobel.
Races of Bees, N. E. France, Platteville.
Wintering, In doors or Out, Charles Zelmer, Wauzeka.
Feeding Bees, M. M. Rice, Bo-cobel.
Location of Apiary, Court Main, Bo-cobel.
Selling Honey, W. V. Miller, Bloomington.
Queen-raising, Introducing, etc., A. Arns, Hurlbut's Corn's.
Marketing Honey, H. Evans, Wauzeka.
Help by our Society, National, State, and Local, N. E. France.
Honey plants, J. W. Van Allen, Haney, Wis.
How to Extract our Beeswax, Edwin Pike, Bo-cobel.
Robbing—Cause and Cure, A. E. Collie, Mount Hope.
N. B.—The date of the above convention has been changed from the 1st to the 8th.

Bo-cobel, Wis.

BENJ. E. RICE, Sec'y.

The Capital City Bee-keepers' Association will meet at 10 A.M., Sept. 26, 1890, in the supervisor's room, at Springfield, Ill. All are invited, especially the ladies.

C. E. YOCOM, Sec'y.

The next convention of the Turkey Hill Bee-keepers' Association will take place at the Turkey Hill Grange Hall, near Wiederman's Station, three miles southeast of Belleville, Ill., Oct. 30, 1890. All interested are invited.

S. BRAEUTIGAM, Pres.

Belleville, Ill., Sept. 9.

SHIPPING-CRATES.

We are making them cheap and neat.
Write for prices.

C. B. LEWIS & CO.,
WATERTOWN, WIS.

In responding to this advertisement mention GLEANINGS.

Bee-Keepers' Supplies.

WHY ♦ SEND ♦ LONG ♦ DISTANCES ?

SEND NAME ON POSTAL CARD FOR MY
NEW PRICE LIST TO

C. P. BISH, Grove City, Mercer Co., Pennsyl'a.

Formerly of St. Joe Sta., Butler Co., Pa.

ESTABLISHED IN 1884. 9tfdb

Please mention this paper.

Send 25c for my book of discovery and invention,

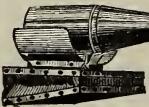
THE QUEEN RESTRICTOR.

Address C. W. DAYTON,
CLINTON, Rock Co., Wis.

In responding to this advertisement mention GLEANINGS.

FOR SALE.—Count'y Store, postoffice and dwelling-house in same building; also 50 Colonies Bees. 17-18d Address S. HEATH, Tidal, Armstrong Co., Pa.

•••BEST ON EARTH•••



ELEVEN YEARS
WITHOUT A
PARALLEL, AND
THE STAND
ARD IN EVERY
CIVILIZED
COUNTRY.



Bingham & Hetherington
Patent Uncapping-Knife,

Standard Size.

Bingham's Patent Smokers,

Six Sizes and Prices.

Doctor Smoker, 3½ in., postpaid	\$2.00
Conqueror " 3 "	1.75
Large " 2½ "	1.50
Extra (wide shield) 2 "	1.25
Plain (narrow) " 2 "	1.00
Little Wonder, 1½ "	.65
Uncapping Knife.....	1.15

Sent promptly on receipt of price. To sell again, send for dozen and half-dozen rates.

Milledgeville, Ill., March 8, 1890.

SIRS:—Smokers received to-day, and count correctly. Am ready for orders. If others feel as do your trade will boom. Truly, F. A. SNEEL.

Vermillion, S. Dak., Feb. 17, 1890.

SIRS:—I consider your smokers the best made for any purpose. I have had 15 years' experience with 300 or 400 swarms of bees, and know whereof I speak. Very truly, R. A. MORGAN.

Sarahsville, Ohio, March 12, 1890.

SIRS.—The smoker I have has done good service since 1883. Yours truly, DANIEL BROTHERS.

Send for descriptive circular and testimonials to 1tfdb BINGHAM & HETHERINGTON, Abrovia, Mich.

In responding to this advertisement mention GLEANINGS.

DADANT'S FOUNDATION

Is kept for sale by MESSRS. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; O. G. Collier, Fairbury, Neb.; G. L. Tinker, New Philadelphia, O.; E. Kretcher, Red Oak, Ia; P. L. Viallon, Bayou Goula, La.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wisconsin; J. Matteson, Atwater, Ohio; Oliver Foster, Mt. Vernon, Iowa; C. Hertel, Freeburg, Illinois; Geo. E. Hilton, Fremont, Mich.; J. M. Clark & Co., 1517 Blake St., Denver, Colo.; Goodell & Woodworth Mfg. Co., Rock Falls, Ill.; E. L. Goold & Co., Brantford, Ont., Can.; R. H. Schmidt & Co., New London, Wis.; J. Stauffer & Sons, Nappanee, Ind.; Berlin Fruit-Box Co., Berlin Heights, O.; E. R. N-wcomb, Pleasant Valley, N. Y.; L. Hansen, Davenport, Ia; C. Theilman, Theilmanton, Minn.; G. K. Hubbard, Fort Wayne, Ind.; T. H. Strickler, Solomon City, Kan.; E. C. Eaglesfield, Berlin, Wis.; Walter S. Pouder, Indianapolis, Ind., and numerous other dealers.

LANGSTROTH on the HONEY-BEE,
REVISED.

The Book for Beginners, the Most Complete Text-Book on the Subject in the English Language.

Bee-veils of Imported Material, Smokers, Sections, Etc.

Circular with advice to beginners, samples of foundation, etc., free. Send your address on a postal to 4tfdb CHAS. DADANT & SON.

HAMILTON, HANCOCK CO., ILLINOIS.

In responding to this advertisement mention GLEANINGS.

MONMOUTH, JESSIE, and MAY KING
strawberry-plants; only 50c per 100, or \$4.00 per
thousand. S. F. REED, N. Dorchester, N. H. 18d

Wants or Exchange Department.

WANTED.—To exchange pure bred poultry for white extracted honey. Select breed you want from my circular (sent free) and mail sample of honey. S. P. YODER, East Lewistown, O. 17tdb.

WANTED.—Golden Queen raspberry roots in exchange for other nursery stock. M. ISBELL, 15-18d Norwich, Chenango Co., N. Y.

WANTED.—I will exchange sewing-machines, new, and fruit-trees, for honey. Address 15-24db E. PETERMAN, Waldo, Wis.

WANTED.—To exchange Italian bees in Portico L. hives for hives in flat or one-piece sections. A. W. GARDNER, Centerville, St. Joseph Co., Mich. 16-17-18d

WANTED.—To exchange all kinds of wall paper, for honey. 1tfdb J. S. SCOVEN, Kokomo, Ind.

WANTED.—Honey in exchange for supplies or cash; must be cheap. F. C. ERKEL, LeSueur, Minn. 18-19d

WANTED.—To exchange full colonies of bees for apiarian supplies of every description, or for automatic section-machine. W. H. PUTNAM, 18tdb Supply-dealer, River Falls, Wis.

WANTED.—To exchange National Safety Bicycle, ball bearing, cost \$75.00 when new; used one season; will take white-clover honey, extracted, or offers. E. C. ELVER, Mt. Horeb, Wis. 18-19d

WANTED.—To exchange all kinds of nursery stock, peaches, pears, grapevines, raspberries, strawberries, etc., for foundation, beeswax, empty combs, or offers. Address T. G. ASHMEAD, Williamson, N. Y.

WANTED.—To exchange Ply. Rock fowls, fine stock, for a lot of empty L. combs for extracting, or offers. T. G. ASHMEAD, Williamson, N. Y. 18tdb

WANTED.—To exchange 2-seated cutter, new, for empty L. combs, fdn., sections, hives, or offers. 18d JOHN BURR, Braceville, Ill.

WANTED.—To exchange bee-hives for bees, will guarantee satisfactory hive. 18tdb LOWRY JOHNSON, M'F'R, Masontown, Fay. Co., Pa.

WANTED.—To exchange a Given foundation press for white extracted honey. 18tdb J. M. ROOD, Dryden, Lapeer Co., Mich.

WANTED.—To exchange a single harness, or light double road harness, sleighs, one a light one, or two seated buggy wagon, for a small planer, swing saw, and a power press for punching iron. GEO. E. KNOX, Ballston Spa, N. Y.

SITUATION offered to a competent wood worker who thoroughly understands the manufacture of bee-hives, one-pound sections, etc. Address with references, W. H. PUTNAM, River Falls, Wis. 18tdb

WANTED.—To exchange one steam honey-evaporator, and one 240-egg incubator, for good, sound double work harness (medium weight), side saddle, single harness, one-piece sections, S. hives in flat, or offers. S. B. SEAMAN, Harford Mills, Cortland Co., N. Y.

WANTED.—To exchange a \$150 Silver Tongue organ, for 600 lbs. of white-clover honey. Write for particulars. C. K. READING, Davenport, Iowa.

WANTED.—Lessons in Shorthand by mail in exchange for honey or bees. Address D. H. KENT, 118 East Third St., St. Paul, Minn.

FOR SALE OR EXCHANGE.

House and lot, in Lima, Livingston Co., N. Y., for full colonies of bees, Italiano *preferred*. One of the oldest and best seminaries in the State located there. For full particulars, address 18d J. S. VANDENBERGH, Canandaigua, Ont. Co., N. Y.

CHOICE

HONEY

FOR SALE

CHEAP

ADDRESS

JAMES HEDDON, DOWAGIAC, MICH.

ARE YOU GOING

TO ATTEND THE

MICHIGAN STATE FAIR?

If so, please call at "Bees & Honey Hall," and examine the "Golden Italian Bees," on exhibition by JACOB T. TIMPE, of Grand Ledge, Mich. For prices on Queens see Oct. 1st. GLEANINGS. Don't forget to call while at the FAIR. I shall also have other races on exhibition. Don't fail to see them.

50 COLONIES OF BEES FOR SALE,

In ten-frame Langstroth hives, \$8 per colony. Have plenty of honey to winter on. Also a lot of bee-supplies. JOHN CROMBIE, Columbus, Wis.

FOR SALE.

Good farm, $\frac{1}{4}$ section, on ten years' time, 8% interest. Small payment of principal, one or two hundred dollars, and the 8% in advance yearly, or semi-annually. Has fine grove; 5 acres, 100 bearing apple-trees; small fruits; nice evergreens in yard; good well; house 14x26, with L 8x16; barn 16x32; board-roof granary 16x16; all fenced; 3 and 4 fields, all in cultivation; no waste land; 3 miles to P. O.; 1 mile to school; 3 miles to 5 churches. This is fine farm; price \$4000. Also 80 acres finely improved; all kinds of fruit for this latitude; for sale on as good terms; 80 rods to school; 1 $\frac{1}{4}$ miles to M. E. church; good locality; all American settlers; also good stock; horses, cattle, hogs, and 100 col's of bees in Simplicity hives. A fine chance for some one wanting to locate in Neb. Reason for selling: We wish to go to the Pacific coast. For further information, call on or address R. R. RYAN, Bradshaw, Neb.

In responding to this advertisement mention GLEANINGS.

Black and Hybrid Queens For Sale.

About 12 choice hybrid queens for sale, at 25c each, or 5 for \$1.00. GEO. H. DENMAN, Pittsford, Hillsdale Co., Mich.

A few Carniolan queens bred from imported mothers and mated to Italian drones and vice versa, for sale at 25c; also 2 blacks at 15c. C. BROWN, Box 61, Dayton, O.

I have a few dark three-banded queens for sale, at 60 cents each; two for \$1.00. First come first served. GEORGE J. HALL, Rumney, Grafton Co., N. H.

I will sell a few more mated Italian queens at 25 cents each. C. G. FENN, Washington Litchfield Co., Conn.

Mismated Italian queens, 20 cts.

F. C. MORROW, Wallaceburg, Ark.

I have 30 nice hybrid and 35 young black queens for sale. Send me 50c and get one of them. 16-17-18d A. D. ELLINGWOOD, Berlin Falls, N. Y.

→VICTOR BICYCLES



Will carry you up hill easier and down hill faster than any others you ever mounted.

ALL INTERCHANGEABLE.

ALL HIGH GRADE.

ALL RIGHT.

Send for Catalogue.

OVERMAN WHEEL CO., Makers, Chicopee Falls, Mass.

☞ In responding to this advertisement mention GLEANINGS.

EUREKA FRAME MACHINE.

Something every bee-keeper should have.
For price and particulars address

24-23db **F. W. LAMM,**
Box 106, Somerville, Butler Co., O.
Please mention this paper. 24-23db

BEES **SEND** for a free sample copy of the **BEE JOURNAL**—16-page Weekly at \$1 a year—the oldest, largest, and cheapest Weekly bee-paper. Address **BEE JOURNAL**, Chicago, Ill. 16tfdb 1tfdb
Please mention GLEANINGS.

SPECIAL CROPS.

A magazine for advanced agriculturists; 25 cts. per year; sample 7 cts. Also, Black Minorcas, B. Leghorns, and S. Wyandottes; eggs of either, per setting, 75 cts.; 26 at one time, \$1.00. 4-50d

C. M. GOODSPPEED, Skaneateles, N. Y.

☞ In responding to this advertisement mention GLEANINGS.

NOW is the time to set **STRAWBERRIES** for next year's fruiting. Write for fall price list of plants and Secrets of Success in Growing Small Fruits; sent free, on application to I. A. WOOLL, Elsie, Mich. 16tfdb

WILL SELL APIARY OF 33 COLONIES IN fine condition (good location). Also 40 acres of land one mile from lively town. Address all inquiries to **BOX 98, White Cloud, Mich.** 16-17-18d

NOW FOR A BARGAIN.

I will sell cheap my entire stock of good Italian bees, one honey-extractor, and all my bee-fixtures; and if sold soon will sell the honey also, as I wish to retire from the business. **MRS. REBECCA KINNEY,** 16 19db **BLOOMSBURG, Col. Co., Pa.**

☞ In responding to this advertisement mention GLEANINGS.

FOR LIGHT AND DARK FERRETS,

and pure Poland-China Swine, address

N. A. KNAPP,
Rochester, Lorain Co., O.

“HANDLING BEES.” Price 8 Cts.

A chapter from “The Hive and Honey Bee, Revised,” treating of taming and handling bees; just the thing for beginners. Circular, with advice to beginners, samples of foundation, etc., free. 5tfdb **CHAS. DADANT & SON,**
Hamilton, Hancock Co., Illinois.

☞ In responding to this advertisement mention GLEANINGS.

ITALIAN QUEENS CHEAP.

We will sell Italian queens at the following low prices: Tested, 85 cts.; one-half doz., \$4.75; untested, 65 cts. each. Satisfaction guaranteed.

LEININGER BROS., Douglas, Putnam Co., Ohio.

“BANNER” Years ago, when I began working with my brother, the editor of the *Review*, his apiary was called the “Banner Apiary.” A large share of this apiary is still kept at the old place, where I manage it on shares. It is stocked with a fine strain of Italians, and I have been saving the best cells from the best colonies, when they swarmed, and having the queens hatched and fertilized in nuclei. These queens I offer at 75 cts. each, or three for \$2.00. No black bees near here. Can fill orders promptly, and will guarantee safe arrival. Make money orders payable at Flint, Mich. Address

15tfdb **ELMER HUTCHINSON,**
Rogersville, Genesee Co., Mich.

N. B.—Bees are now working on buckwheat, and swarming. I can still furnish queens reared by the swarming impulse. E. H.

☞ In responding to this advertisement mention GLEANINGS.

SECTIONS.

\$2.50 to \$3.50 per M. Bee-Hives and Fixtures cheap. **NOVELTY CO.,**
6tfdb **Rock Falls, Illinois.**

Please mention this paper

FOLDING PAPER BOXES.
CRAWFORD'S SECTION CARTONS
ARE THE BEST.

Send for free sample and price list, and find out the reason. A certain fact has come to our knowledge that is worth dollars to you. Send for it.

12tfdb **A. O. CRAWFORD, S. Weymouth, Mass.**
Please mention this paper.

500 Italian Queens For Sale. Tested, \$1.10, three for \$3.00. Untested, 70 cts. each; three for \$2.00. Also bee-keepers' supplies, etc. 16-page circular free. 15tfdb
JNO. NEBEL & SON, High Hill, Mo.

GOLDEN ITALIANS.

Full colonies with tested queen, in A. L. Root's Portico hives, only \$4.00. Barnes foot-power saw for hive-making, Victor scroll saw. Must be sold before Oct. 20, '90.

B. F. STOVER,
Roscoe, O.

☞ In responding to this advertisement mention GLEANINGS.

HONEY COLUMN.

CITY MARKETS.

CINCINNATI.—*Honey*.—Honey of all kinds is scarce. There is almost no comb honey in our city. But, what is of greater importance, is, that we have hardly enough extracted honey to supply our manufacturing custom. The "hold on" doctrine is bad policy, as we are sure to be overstocked again about Christmas-time. Such has been the case generally, and is likely to repeat itself, in a great country like ours. Choice comb honey would bring 15@16 in the jobbing way. Extracted honey brings 5@8 on arrival.

Beeswax.—There is a good demand for beeswax, at 24@26 on arrival, for good to choice yellow.

Sept. 8.

CHAS. F. MUTH,
Cincinnati, Ohio.

ALBANY.—*Honey*.—We have received up to date, 251 cases of comb and 39 half-bbls. of extracted honey; nearly all of this is buckwheat of fine quality. Fancy clover seems to be very scarce. Trade opens up briskly at following prices: Clover, 16@18c per lb.; mixed, 13@14; buckwheat, 11@13. Extracted, 7@9.

Sept. 12.

CHAS. McCULLOCH & CO.,
339 Broadway, Albany, N. Y.

NEW YORK.—*Honey*.—Honey in the comb is very scarce so far, and new arrivals are sold as fast as they come in. Fancy white, 1 lb., 16½@18c; fair, 14@16c; dark and mixed, 12@14. We have received no 2-lb. combs as yet; these would bring about 2 cents less, according to grade. Extracted Florida honey, 7½@8c; Common Southern, 6½c per gal.; California, 6½@7c; Basswood and white clover, 7½@8c. Demand is very good.—*Beeswax*, 27@28; stock small.

Sept. 11.

F. G. STROHMEYER & CO.,
New York City.

CHICAGO.—*Honey*.—Comb is now held firmly, and sales are being made at 17@18c for best grades of white. Up to this time there has not been more than the trade has taken from day to day, and as the weather is now cool an active trade will ensue. Extracted honey also sells well at 7@8c for barrels and cans. Mail orders are filled at above prices f. o. b., Chicago.

Sept. 10.

R. A. BURNETT,
161 So. Water St., Chicago, Ill.

ST. LOUIS.—*Honey*.—The demand is excellent for both comb and extracted, while the market is well supplied with the latter, the former is scarce. We quote: Choice white clover, comb, 13@14c; inferior, 12@13. Extracted and strained, in barrels, 5@6; cans, 7½@8½. *Beeswax*, prime, 27.

Sept. 11.

D. G. TUTT GRO. CO.,
St. Louis, Mo.

KANSAS CITY.—*Honey*.—The demand for comb honey continues good; supply light. We quote: 1-lb. white comb, 15@16; dark, 13@14; 2-lb., white, 13@14; dark, 12@13. Extracted, white, 7c; dark, 5@6. *Beeswax*, 2@25. CLEMONS, MASON & CO., Kansas City, Mo.

Sept. 5.

NEW YORK.—*Honey*.—Honey is in excellent demand and finds quick sale at the following prices: Fancy white, 1 lb., 16@18; 2 lb., 14@15; off grades, 1 lb., 13@15; 2 lbs., 12@13; buckwheat, 1 lb., 11@12; 2 lbs., 10@11. Extracted, basswood and clover, 8c; buckwheat, 6c; California, 6½@7.

Sept. 12.

HILDRETH BROS. & SEGELKEN,
28 & 30 West Broadway, New York.

KANSAS CITY.—*Honey*.—Demand for comb is larger than receipts. We quote: 1-lb. white comb, 16c; 2 lb., 14c; 1-lb. dark comb, 13; 2-lb. dark comb, 12. Extracted, white, 7; dark, 5@6. No beeswax on the market. HAMBLIN & BEARSS,

Sept. 11.

514 Walnut St., Kansas City, Mo.

BOSTON.—*Honey*.—Honey is selling fairly well, from 16@18c for white clover 1-lb. comb. Extracted, 7½@9. No beeswax on hand. BLAKE & RIPLEY, Boston, Mass.

Sept. 11.

DETROIT.—*Honey*.—Comb honey is selling at 14@16c; very little in the market. Extracted, 7@8c. *Beeswax*, 26c. M. H. HUNT, Bell Branch, Mich., Sept. 12.

FOR SALE.—1000 lbs. white-clover honey, in 1-lb. sections. Will pack in 25-lb. cases, crated to suit purchaser, and to go by freight. I want 18c for it here. J. M. AKER, Smithville, Clay Co., Mo.

FOR SALE.—100 lbs. of white-clover honey, at 15c per lb., on board cars. LUCY NOYES, Geneva, N. Y.

WANTED.—A barrel of white-clover honey.

Address EDGAR BRIGGS,
Manchester Bridge, Dutchess Co., N. Y.

FOR SALE.—2000 pounds of very nice white-clover honey, in 60-lb. cans. H. VAN VRANKEN,
Union City, Branch Co., Mich.

FOR SALE.—5000 lbs. well-ripened extracted honey, in 60-lb. cans. C. H. STORDOCK, Durand, Ill. 18-23d

FOR SALE.—1200 lbs. extracted clover honey, in 60-lb. cans, at 10cts. here.

R. H. BAILEY, Box 81, Ausable Forks, N. Y.

FOR SALE.—800 lbs. extracted clover honey at 9c. M. ISBELL, Norwich, Chenango Co., N. Y.

WANTED.—Honey, both comb and extracted. Give kind, quality, and price. Address H. G. CAMP, Winona, Ohio.

WANTED.—To know who will furnish me about 700 lbs. buckwheat honey, f. o. b. State price and size of packages. Address G. N. CORNELL,
91 West Main St., Battle Creek, Mich.

To BEE-KEEPERS!

IN ADDITION to our New England **Honey Trade** we have leased a Store in New York City (in the best possible location to catch the Grocery Trade), and propose handling

COMB AND EXTRACTED HONEY

There. As we have been practical Bee-Keepers and have had some 12 years' experience in the Honey Trade (during which time we have handled MORE HONEY than any House in New England), we feel justified in saying that we understand the Honey Trade, and think we can handle your **Surplus Honey** to the very best advantage.

We shall endeavor to make Quick Sales at the very **highest prices**, and by making prompt returns we hope to merit your patronage. Advances made when requested. Stencils furnished — also printed instructions for Packing and Shipping, giving valuable information gained by our experience in Shipping Honey by the Ton and in Carload lots.

Correspondence, Visits, and Consignments Solicited. Address

F. I. SAGE & SON,

183 Reade St., NEW YORK, N. Y.

☒ No Consignments received at Wethersfield, Conn.

REFERENCES.—Bradstreet's and Dunn & Co.'s Commercial Reports, and the numerous Bee-keepers whose Honey we have handled the past 12 years.

18-23d Please mention this paper.

NEW FACTORY.

We will soon be in our new factory, which will be the largest and most complete in the world. We shall make the best of goods at lowest prices. We are ready for contracts for next season's supplies. Write us.

C. B. LEWIS & CO.,

17-tfdb WATERTOWN, WIS.

☒ In responding to this advertisement mention **GLEANINGS**.

PURE ITALIAN QUEENS, 50 CTS. Tested, young, and producing nice banded workers. F. C. MORROW, Wallaceburg, Ark.



Vol. XVIII.

SEPT. 15, 1890.

No. 18.

TERMS: \$1.00 PER ANNUM, IN ADVANCE;
2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00;
10 or more, 75 cts. each. Single number,
5 cts. Additions to clubs may be
made at club rates. Above are all to
be sent to ONE POSTOFFICE.

Established in 1873.
PUBLISHED SEMI-MONTHLY BY
A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS
than 90 cts. each. Sent postpaid, in the
U. S. and Canadas. To all other coun-
tries of the Universal Postal Union, 18
cts. per year extra. To all countries
not of the U. P. U., 42 cts. per year extra.

TOO CLOSE SPACING, ETC.

GETTING WAX OUT OF EXTRACTORS.

On page 589, friend Root, you say you don't bother to re-melt the wax to get it out of the extractor-pan. Then your pan must be different from mine. Mine has a screw-cap that would not allow the cake of wax to come out. I wish it weren't there. But the wax I have been getting would have to be re-melted any way, because there is so much bee-glue mixed all through it. When the mass that is put in to be melted is half bee-glue, a good share of this latter runs through the strainer, and I don't know any way to prevent it: for when hot enough it is just like molasses. Fortunately it takes more heat to melt bee-glue than to melt wax. So when the pan is full as it can conveniently be, I set it in the oven of the cook-stove till the wax is melted, then pour it off, leaving the bee-glue to be scraped out of the pan.

FRED C. SMITH'S TOP-BARS—SEE PAGE 602.

They are $\frac{5}{8}$ wide, with $\frac{5}{16}$ between them. That makes $1\frac{3}{8}$ from center to center. Isn't there danger of running close spacing to extremes? The harm done by it may not always be seen. In cool weather the spacing may be so close that a sufficient mass of bees can not get between the combs to get up the requisite heat. This might continue for years, and not be noticed. But there is one thing that can be noticed, if one takes the pains to look. I have had some closer spacing within the last two years than I have ever had before. Now and then I have found a comb, on one side of which there was no brood throughout a large part of it. It was worker comb, black with age, the cells empty, and every thing appeared right about it, only the queen laid no eggs in it. I think the only trouble was that there was not room enough between the combs. The spacing of top-bars was no closer than for other combs—why should there be any difference? Well,

the spacing of the top-bars doesn't tell the whole story. Suppose you examine one of your hives with common hanging frames. First see that the spacing of the top-bars is perfect, each space just exactly like the others. Now tip up the hive and look at the bottom-bars. Don't you see how irregular the spacing is? Some spaces are two or three times as large as others. But there is another reason for irregularity. Even with wired frames, the septum of the comb is not always exactly in the center. Suppose one comb has the septum $\frac{1}{8}$ of an inch to the right of the center, and the adjoining comb has its septum $\frac{1}{8}$ to the left of the center. That may make the distance between the comb surfaces $\frac{1}{4}$ of an inch less than the average. In friend Smith's case, that would make the combs less than one inch from center to center. The only thing, then, for the bees to do is to leave one surface of comb unused, cutting down the cells as much as may be necessary. Of course, I have taken an extreme case, but I think it shows that we would better space too wide than too close.

QUEEN-EXCLUDING ZINC FOR NON-SWARMING EXTRACTING.

On page 630, F. H. Cyrenius says: "For non-swarming extracting, when the hive is full of brood, and honey begins to come, place a set of empty combs or foundation below with the queen, the brood above, and the zinc board between, and they will roll in the honey if it is to be had, and will fill the upper story as the brood hatches, and the outside combs below." I tried several precisely as directed above. In each case the queen stopped laying. In all but one case I put a frame of brood below after waiting two or three days, and then the queen went to laying. In the remaining case the queen was put below the excluder May 24, and left till June 3, when I found only eggs below, showing that the queen stopped laying at least a week. Now, I'm not sure that it is always bad to have the queen stop laying: I only want

to call attention to the fact, that, if you want to make sure of her laying right on, you must give her one frame of brood as encouragement. Possibly bees do not always act as mine did, but I suspect they generally do.

GETTING BEES TO EMPTY SECTIONS.

On page 638, E. D. Howell asks how to get the bees to carry the honey from partly filled sections to the body of the hive when they need it for winter stores. If they need it for winter stores they will carry it down if the sections are left on the hive; but sometimes they make very slow work of it. To hasten matters, if your hives admit of it put the super of sections under the hive. If the work doesn't then go fast enough, put the super of sections on the stand, on top of it an empty super, and on top of this the hive. Look out for robbing. Leave no entrance at the bottom of the super, and, if necessary, contract the entrance in some way. If robbers are troublesome, make the change in the evening. If you merely want the sections cleaned, without caring what colonies get the honey, put several supers in a pile away from the hives, covering up securely, *leaving room for only one bee to enter at a time.*

Marengo, Ill.

C. C. MILLER.

It must be, friend M., that our pan is different from yours. When we first began making solar extractors we made the sides perpendicular; but friend Green wrote us that we ought to make them sloping, so the blocks of wax would drop out when the pan was inverted, and we have since done so. It is possible that you have one of our first extractors; and in that case the wax might not come out without melting. As the wax comes from our solar extractors, it is a nice clear yellow, and would be entirely fit for market were it not for its shape. But, about that propolis, it must be that you have more than we.—Yes, I think there is danger of carrying close spacing too far; but instead of having frames further apart, why not use fixed distances, and then the bottoms of the frames will be spaced as accurately as the tops? It would have done you good to see some nice combs at Elwood's and other places where they use fixed distances.

E. R.

BI-SULPHIDE OF CARBON FOR WAX-LARVAE.

USEFUL ITEMS FROM PROF. COOK.

Can you inform me, through GLEANINGS, as to the advisability of using bi-sulphide of carbon for destroying the wax-worms in empty combs? Is it safe to use it for the same purpose with comb honey? Sulphur I dislike to use with comb honey, as it is so easy to use too much and injure the color and flavor.

ARTHUR C. MILLER.

Providence, R. I., Aug. 27.

Prof. Cook replies:

In reply to Arthur C. Miller, Providence, R. I., regarding the use of bi-sulphide of carbon to destroy the bee-moth larvae, I can say unhesitatingly that it will kill them, and, unless turned on the comb, could harm nothing. It might dissolve the combs if turned on them, but would not harm them otherwise. If the combs are put into a tight box or barrel, the liquid turned in, it could be turned against the side of the box or barrel, so as not to touch the combs, and the box at once covered tightly by the use of

oil cloth or other close fabric, the insects will speedily succumb. In case of comb honey it would be entirely safe if used in the same way. I do not suppose it would do any harm to turn it on to the combs. I will at once try it and report. The only danger in the use of this liquid is its explosive character. Of course, safety demands caution that no fire be brought near. The vapor is very inflammable, and, when mixed with the air, quite explosive, so we must keep all fire, like lighted matches, cigars, etc., away till the vapors have escaped. The odor is so marked that it is easy to tell when it has all escaped. This volatilizes so entirely that we can turn it on flour and no harm will follow. It passes wholly off. Bought at wholesale it is very cheap, and I see no reason why it may not be used very satisfactorily by the bee-keeper.

THE TEXAS COW-KILLER.

W. O. Victor, Wharton, Tex., sends a cow-killer. This is illustrated in my Bee-Keepers' Guide, and has been frequently described in GLEANINGS. It looks like an ant, except it is hairy, and is a rich carmine red, bounded with black. It is wingless, though a female, hence the generic name, *Mutilla*. It has a very powerful sting, as Mr. V. says he knows from experience. Will he tell us how its sting compares with that of the bee? I suppose it is much more painful. The insect is a fine one, though badly crushed in the mail. If put in a box or hollow stick with cotton it would have come in good shape. It is not found north.

THE GRAPE SPHINX AND ITS PARASITE.

Mrs. J. R. Beatty, Massillon, O., requests me to explain the relation between a large green caterpillar found on "ivy"—doubtless Virginia creeper—that grows on her porch, and several white egg-shaped masses which stand side by side on its back. These large, fine, green larvæ develop into a handsome moth, the grape sphinx. This so-called worm resembles in form and color the "tomato sphinx" larva, with which all are familiar. This larva is lighter green; the caudal horn is green instead of black; the spots marking the spiracles or breathing-mouths along the side of the body are much more obscure; and instead of several oblique yellowish stripes along the sides there is a nearly white stripe. These larvæ are very common this year, both on the ampelopsis—Virginia creeper—and also on the grape. I think Bertie has had nearly twenty of these in a breeding-cage on our porch during the past few weeks. Indeed, did not nature lay a heavy hand on these larvæ they would make sorry work with the plants which they infest.

Now to answer Mrs. B.'s question regarding the egg-shaped bodies on the back of this sphinx caterpillar: These are the cocoons of minute braconid flies—*Apanteles congregatus*, Say. These little flies lay their eggs in the sphinx larvæ. The minute parasites which hatch from these eggs feast on the caterpillar as it feasts on the grape or ampelopsis leaves. With so many little mouths feeding on its vitals, who can doubt but this larva is a believer in "internal improvement"? The braconid larvæ kill the sphinx larvæ, save our vines for us, and come forth to spin their cocoons on the back of their victim. Thus he bears about on his back his own destroyers, and the parents of other parasites that will do a like good work in the future.

When the box arrived, the little flies had come forth from the cocoons, much as a queen-bee comes from the cell. It is to be hoped that Mrs. B. and the children of many bee-keepers will put these larvæ in glass cans with cloth tied on for a cover. Feed them grape leaves, and so rear the parasites or the beautiful moths. The moths will not come forth from the pupa

till next summer. Bertie expects to rear several moths, as he thinks he has several larvae that are not parasitized.

A. J. COOK.

Agricultural College, Mich.

A MINNESOTA APIARY.

BEES AND GARDENING.

I send you a photo of our Dovetailed hive apiary. Although the hives are not all dovetailed, they will be another season. There are 56 colonies in all—30 in Dovetailed hives. The artist took the picture during our swarming season. You will see my swarming conveniences, from a barrel of water to Mum's device. Your humble servant sits in his old army-chair at the table, in the act of putting foundation into sections. His better half is at his right, and their family of five to the left, near the hammock and swing. Our help (brother and sister) are in front of the house. There are two rows of raspberry-bushes, and some rows of potatoes in the foreground, not shown. The for-

account of its small size, strong and close-fitting joints, just adapted to this cold climate. If the hive were any larger I could not have handled it without loss.

I have a very fine bee-escape in my cellar, with screen windows. The filled supers are taken from hive to cellar near a window. The bees all leave the same night. The wax and propolis are so hard in the morning that you can scarcely take out section-holders and sections. The honey is not allowed to remain in the cellar any length of time, but is taken to a warm room to be more thoroughly ripened. If the editor of GLEANINGS, or any of his assistants (they would all be welcomed) should visit us another fall, they will find a much larger house, better adapted to the wants of a growing family.

WIDE AND THICK TOP-BARS A SUCCESS IN THE DOVETAILED HIVE.

July 19th I took off the first case of honey from the Dovetailed hive with thick and wide top-bars. There was no sign of burr-combs between the top-bars of the frames or on the bottom of the super. The honey was taken



A DOVETAILED HIVE-APIARY.

mer, when grown, will make a nice windbreak for the apiary, which is located in a grove on the edge of the prairie. At the right is my main garden, extending down to a small lake. At the rear of the house is a belt of timber more than a mile in width, bordering one of the largest and most beautiful lakes in the country, called Green Lake, from the color of its waters. This section of Minnesota is called the "Park Region," as it is interspersed with lakes, groves, and prairie. Probably no finer section of farmland is in the Northwest. Our soil is a rich gravel loam, with subsoil of clay. We can cultivate our gardens after heavy rains.

Our garden (for 12 years adjoining the bee-yard) has been cultivated by horses on two sides of the apiary since its location, and they have never been stung. Of course, our bees (hybrids and blacks) are handled with care, and honey is never left around to start robbing. We should all feel it a great hardship to be deprived of our bees, and we should as soon think of being without milk as honey. I was first led into keeping bees through failing health. It has been a pleasant occupation for mind and body, and has paid better for the amount of capital invested than any other investment on the farm. I am following diversified farming—raising horses, cattle, growing grain, and a small dairy. I adopted the Dovetailed hive on

from a strong colony of bees in the middle of a heavy flow of basswood. There was no sagging of the top-bars. Last year was my first experience with burr-combs and slatted honey-boards (having used previously a closed-top frame), and I hope it will be my last.

N. P. ASPINWALL.
Harrison, Minn., July 21, 1890.

JULY 15TH GLEANINGS.

ITEMS FROM EXPERIENCE, FROM AN A B C SCHOLAR.

Mr. Root:—The contents of No. 14 of GLEANINGS having been devoured with my usual keen appetite for good things, I am now ready to offer my little mite toward spreading another feast. If my offering is palatable, give it a place on the table; but if not, cast it aside. First, in behalf of the A B C class, I wish to say that we are thankful that our reverend friend Stenger is not the editor of GLEANINGS. From what he says about foolish questions, I fear many of us would fare but indifferently at his hands. Yet we heartily agree with all he has to say on the subject, and are doubly thankful that we have such patient instructors as we find in both the Roots. Much as I detest

the filthy, sinful habit of tobacco-using, I can not indorse Bro. Stenger's last sentence: "Tobacco does even *more* harm than the heavy drinks." The tobacco vice is money, and possibly health, wasted on filth and general nastiness, and is, in the writer's judgment, positively sinful. But alcoholism is reason dethroned, morals debased, health destroyed, hope blasted, money wasted, and souls damned. Tobacco robs home of cleanliness, and gives to a wife foul lips to kiss, while drink robs home of happiness, and for kisses gives blows and dire distress.

COVERS FOR CHAFF HIVES.

I want to tell you how I have made some covers for chaff hives that suit me exactly—handsome, light, true, and tight. I found the comb, or two-piece cover, almost sure to warp, so that moths, robbers, etc., could readily crawl under. After considerable study I decided on the following: After the hive was furnished ready for cover I fitted and nailed strips on to the hive-roof so as to raise the upper story or surplus chamber one inch at the back, and three inches at the front, with sides sloping from three inches to one inch, thus giving two inches pitch for roof.

I made my roof of very narrow half-inch matched linn, by nailing same to $\frac{1}{2}$ -inch-square cleats, so that these cleats would fit neatly over the end-pieces, front and back, mentioned above. I also nailed similar cleats under the edges so as to fit down over sloping sides, thus forming a complete cap-cover. I leaded the matched joints, and painted both sides. I bored a hole in the three-inch piece under the front end of the cover, and tacked a wire net inside and outside for ventilator; and now I think I have a perfect cover.

KEENEY'S METHOD OF WIRING A SUCCESS.

I have tried Keeney's plan of wiring, with Ernest's suggestion of wire-nail hooks, and I regard it as just the thing. I filled some of these frames with strips of four-inch section foundation by turning the edge of the foundation over the comb-guide so as to cover the guides on both sides. These have been built out beautifully, and I think it would take considerable pounding to knock out the combs, and I feel sure the top-bars will never sag.

SKUNKS AND BEES.

Your answer to E. W. Easter, as to why the bees dwindle, is most probably correct; but had I asked you a similar question a few weeks ago, and had added the fact that they had a prolific queen, what would have been your answer? In fact, I have had quite a remarkable case of dwindling, which I fancy might have puzzled some of the veterans had they not, like myself, by accident discovered the cause. And now I want to say to the A B C class, and may be the veterans might do well to lend an ear, beware of *skunk* dwindling. These little varmints nearly skunked me out of one good strong colony, and seriously damaged several others; and had I not tumbled on to their depredations early in the game, I don't know what the result would have been.

I happened to use some coal ashes to level up a place for a hive; and shortly after, and while the ashes were still fresh, I discovered one morning after a rain, that the alighting-board was smeared over with wet ashes, and the ashes in front trampled down in a suspicious manner. Having gone carefully through my A B C, I at once recalled the few lines on skunks as among the enemies of bees. I kept watching for further evidence of their mischief, but saw nothing for several weeks, and had almost forgotten the matter. But while I was absent from home, Mrs. B. discovered one of our best

colonies dwindling rapidly from day to day; and recalling what I had said of skunks, she set our 12-year-old boy to watch at night; and, sure enough, he discovered not *one* but *two* of the rascals at their mischief. He was afraid to tackle them, and went to a neighbor's for a gun, but when he came back they had gone, or at least he could not find them. Next night they put in an appearance, and he tackled one with a stick; but after giving it a beating it got a shot at him, and hit him in the eyes, blinding him so he could not see. Still he beat at it until his stick broke, and the rascal escaped. The bold little marauders returned the following night. I having that day returned home, set poison for them. My son has seen one of them once since, but we have no further evidence of their rascality. Now, bear in mind there was absolutely no odor to betray their presence until my son struck one of them. May it not be possible that their mischief is much more common than has ever been suspected?

WHEELERSBURGH, O., AUG. 4. J. M. BROWN.

Friend B., it is no doubt true that tobacco does not do the harm directly that alcohol does; but it is the opinion of many of our best and wisest teachers and professors of colleges, ministers of the gospel, etc., that indirectly, tobacco does more harm than alcohol. It paves the way for the stronger stimulants. An intemperate man always uses tobacco, and I feel sure that it is quite likely that, had he never used tobacco, he would never have had a craving for a stronger stimulant. Dr. Kellogg says that the young man who coolly and deliberately takes hold of a stimulant that he has no craving for, will, without question, have little scruple in gratifying himself in something that his lower nature *does* crave. If our boys can be kept from using tobacco, they can likely be kept from intemperance, licentiousness, and all these other low passions.

BEE-ESCAPES.

THE DIBBERN AND WRIGHT ESCAPES A SUCCESS.

Some two months ago I received your shipment of Dibbern horizontal bee-escapes, and prior to that I had made several after the pattern illustrated on page 280, GLEANINGS (W. W. Wright's). Both have given entire satisfaction in practical application on the Dovetailed hive. Usually from 10 to 25 bees can be found in the super after its removal. Once I met with an utter failure; but on examination I found the queen in the super with the bees. So far I have found the best results with an eight-cone Wright escape. I have tried them in various ways, and sometimes have taken off the super in three hours, and sometimes have left it on two days.

In practice I have had the best results by placing the escape over a super of empty sections, so that the bees are not forced down into the hive nor compelled to lose any time. The conditions under which these tests have been made are peculiar. There is here *no fluctuation* in the flow of nectar. Through a term of years I have found that I can depend on a moderate honey-flow every day for five months.

S. W. SHERFEY.

MESILLA, NEW MEXICO, SEPT. 8.

THE T SUPER.

DR. MILLER OVERCOMES SOME OF ITS OBJECTIONS.

I shall be rather surprised if, within a few years, I do not find something I like better than the T super. As yet, however, I have not seen it. In the meantime I am doing all I can to learn how to overcome the objections to it. I suspect that some who have tried it have not known how to use it properly. Certainly I have learned something in this direction since first using it. A very fair summing-up of the disadvantages of the T super may be found on page 69 of the latest edition of the A B C. They are given under three heads; and a fourth, until lately, would have been added by me. I will speak of it again. Under the first head, friend Root says: "Open-side sections, which of late (1889) are growing in favor, can not be used in it." If I remember rightly I have seen it stated that of late the call for open-side sections has not been large, and I have had the impression that they were rather growing out of favor. How is it now, friend Root? In any case, I think there are some who, like myself, have tried and rejected the open-side sections, and for such this first objection to the T super does not hold.

A B C gives objection 2: "As the upright of the T takes about $\frac{1}{16}$ of an inch, it leaves spaces between the rows of sections, which the bees are inclined to fill with propolis. . . . One-piece sections have a tendency to be diamond-shaped; . . . they come out of the super a little bit out of square." This is putting it very mildly. Instead of $\frac{1}{16}$, the upright of my T tins has $\frac{1}{8}$. The super is $1\frac{7}{8}$ long, inside measure, and four of the $4\frac{1}{4}$ sections measure 17 inches, leaving $\frac{3}{8}$ space for play. And the sections do play. They slouch around in all sorts of shapes, leaving spaces anywhere from nothing to $\frac{3}{8}$ of an inch for the bees to fill with glue. Often the side of a section for more than two-thirds of its length will be entirely covered with propolis, some of it a fourth of an inch thick. I am happy to say that I have entirely overcome this objection. In getting ready for the harvest of 1890, I ordered of A. I. Root separator stuff cut 12 inches by $\frac{1}{4}$, enough to have three pieces for each super. This, of course, meant stuff $\frac{1}{16}$ thick. When it came it was 12 by $\frac{1}{4}$, but the thickness varied, averaging about $\frac{1}{8}$ of an inch. I was taken aback. It would leave no play whatever to get in these three sticks, and it would be simply impossible to get them in. But in this, as in many another case, I found myself mistaken. Although it made a tight fit, there was no great trouble in getting them in. You understand that, after the supers were filled with sections, and the separators all in, these little sticks were pushed down across the supers in the spaces left between the rows of sections, so that four sections, $4\frac{1}{4}$ each, and three sticks each $\frac{1}{8}$ in thickness, just exactly filled the super.

I do not know of any new thing I have tried this year that has pleased me as much as these little sticks. Every section is held perfectly true and square, having no chance to be otherwise, unless so much out of square that one end of the section rises up, which it would do just as much in a Moore crate. The sides of the sections are, of course, entirely clean. Not a bee has a chance to get at them.

In using these little sticks I found another advantage not to be despised. Before I tried them I thought it would be harder to draw out a single section held in place by the sticks, and harder to put it back. To my surprise I found it somewhat easier to draw out, and a great

deal easier to put in. There is less surface friction. In putting in a single section without the sticks, the section generally strikes on the upright of the T, and you can't push it to one side enough to slide it down. The two sticks make a play-space of $\frac{1}{8}$ inch all the way from the sticks to the T, allowing you to move the bottom of the section back and forth to strike the right spot.

I don't know by what sort of bungling friend Root sent sticks $\frac{1}{16}$ thick when I asked for separator stuff, but I'm sure I don't want them any less.

The third objection the A B C makes to the T super is, that it is not an easy matter to make the central and outside rows change places. Friend Root, would you make such change if it were easy? Is there any advantage in it?

C. C. MILLER.

Marengo, Ill., Aug. 25.

Yes, friend M., open-side sections, in the early part of 1889, seemed to be growing in favor, but, for some reason or other, have been growing less and less popular. We made special automatic machinery, so that we could make them at the same price as the regular two-beeway section; but now there is scarcely a call for them. The first objection, then, does not bear very hard against the T super. Objection No. 2 can be obviated by the little sticks, but it seems to me as if they would be a good deal of a nuisance. We have three loose T tins, and then, after that, three more sticks—six pieces besides the T-super shell itself to hold the separators and sections. I do not know, friend M., unless it was the great rush during the past season, how we came to give you separator stuff thicker than you ordered. I am very glad now if our oversight was a blessing in disguise. The last objection still holds. On my trip among the York State bee-keepers I found that those extensive bee-keepers, many of them, prefer some arrangement whereby they can shift the outside row of sections to the inside, and *vice versa*. That is why, friend M., I like section-holders. By the way, Elwood uses almost identically our section-holder; or perhaps, rather, I should say, we are using his. See Notes of Travel elsewhere. Hetherington uses the T-super arrangement.

IN-AND-IN BREEDING.

IS IT INJURIOUS?

A correspondent writes, that in his apiary of 75 colonies he has two colonies which cap their honey very white, with very even combs. He says that he would like to propagate these bees for this special quality, and desires to know whether the rearing of queens from one and drones from the other will do, as the two queens are sisters. He thinks that such in-and-in breeding might tend to make the future generations of his bees weakly. If we were sure that both parentages were alike, there might be some chance of making our bees weak by in-and-in breeding; but as it is almost certain that they are not, such breeding as he proposes could not be directly in-and-in breeding. While I do not indorse the Dzierzon the-

ory to its fullest extent, yet it is sufficiently accurate so that, practically speaking, the drones and queens from any mother-queen can not be brother and sister. Now, if our correspondent raises his queens and drones from the same mother, the queens can do no more than mate with a half-brother, unless this mother-queen mated with a drone from her own mother. In this case he would get only three-fourths blood, unless the grandmother to our young queen mated with a drone produced by her mother. Should such a thing as this happen, he would get only seven-eighths blood by breeding drones and queens from the same mother. Here is a point not generally understood by many of our bee-keepers, and one which shows the wisdom of the Creator of the bee. To return to the original question:

Suppose he rears his queens from one queen and the drones from the other as he proposes. It is no way likely that both of the queens mated with brother-drones; hence the young queen will be only half-blood relation to the sister of the mother-queen; and as the drones will be only half-blood relation to the mother of the queens, he can not possibly get a relation nearer than one-fourth. Hence it will be seen that, with no control of the drone, our improving our bees in any one special direction must be only a slow affair at the best, and one in which in-and-in breeding has no very important bearing. Now, suppose we have it all arranged as we wish, and on July 1st we commence to rear our queens, we having plenty of drones flying from the aunt of these young queens. And to make matters more sure, suppose that we have drone-traps on each hive in the apiary, except the one we have selected for our drones: what proportion of these young queens will mate with the drones we wish them to? Well, that will depend upon how near there are other bees to our apiary. If, as we find it usually, not one queen in five will mate the desired drones at this time of year. It is a rare thing to find an apiary where there are not some bees kept within three or four miles of it, or where there is not some tree in the woods that contains bees. This tree, or one of the hives kept by most bee-keepers, will furnish more drones than the breeder will get from his selected colony, as a rule; for colonies that have no attention given them are very prolific in drones. I am satisfied that all the drones of one vicinity have a certain place where they congregate, and that the queens go to this congregating-place when they fly out, which results, as I said before, in the chances being against queens mating as the breeder wishes. To illustrate:

In 1872, Italian drones were reared for the first time as near as three miles of my apiary. That season I purchased an Italian queen, but she gave no drones, as I did not get her till July. There were none but black bees about me up to this time, and no queens had ever shown any yellow in their offspring. This year, about one queen in eight gave workers that were hybrids, many of them being finely marked Italians. With this positive proof before me, that bees mix to a large extent when separated three miles, I can hardly feel pleasant when reading the statement of some, that half a mile in distance is enough to keep two races of bees pure. I find that this congregating of drones and queens occurs only during our summer months, with perhaps a part of September. As the weather becomes uncertain, the loud humming that has been heard on all pleasant days, at a certain place, between the hours of noon and three o'clock in the afternoon, ceases. I find that from then out I am much more sure of having my queens mated with the desired

drones than at any other time of the year, unless it be in early spring.

Again, at this season of the year nearly all the drones are killed off except those especially kept by the apiarist, so that, when it is possible to rear good queens at this season of the year, and we have a few pleasant days, in-and-in breeding can be more nearly accomplished than at any other time; yet, as I have shown above, not enough so to cause our bees to deteriorate very much in some time. If, after we find all drones killed off except those we have preserved, we go to the hive having our drones, some rather cool cloudy day when the hives can be kept open as long as we choose without danger of chilling the bees, and without danger from robbers, and pick out all the inferior drones as to size, color, or any other imperfection, and kill them, we shall then have something from which we can improve our stock in the way we are desirous of doing, and still have it becoming more valuable along other lines as well.

I admit that this is a sort of rambling talk, but perhaps the reader may find something of interest in it after the chaff has been sifted out.

G. M. DOOLITTLE.

Borodino, N. Y., Sept. 2, 1890.

You are doubtless right, friend D. Queens are very apt to be fertilized at a distance from home, and they no doubt seek a place where drones congregate. An interesting point comes up here. There are a good many now who are breeding untested queens for market. Those who have just begun in a new locality will probably find that a very large percentage of their queens will turn out to be hybrids. It takes years for a locality within three or four miles of the breeding-yards to become so thoroughly Italianized that nine-tenths of the untested queens reared and sold will prove to be purely mated. There will be bee-trees containing blacks or hybrids, and it will be a long time before these will be Italianized by the slow process of supersEDURE of old queens or the infusion of new Italian blood in the progeny of young queens.

BEES TAXABLE PROPERTY,

AND FOR GOOD REASONS.

A. I. Root:—Your name has become quite familiar to me through the agricultural press. It seems that your interests must be varied. I have a friend who frequently sends to you for bee-supplies. I see notices of your operations as a farmer, and, if I mistake not, a few years ago I saw an item telling of your experiments with A. N. Cole's sub-aqueous culture, in which I have taken a deep interest. Have you given to the public the results of those last experiments?

What could have suggested the discussion of the advisability of taxing bees, now going on in your columns? Is some bee-owner trying to escape bearing his just share of the burdens of government? The theory of the law in this State is, that every thing that can be converted into property, and that may be made useful to man, shall bear its proportion of tax. There are no exceptions. Every pig, chicken, horse, or ox, must be listed; every bushel of grain, every pound of wool, every yard of cloth, every wagon, cart, watch, or clock must be put down in the list at its true market value, and to its

truth you make oath. Why exempt bees? As valuable and useful as they are, they are certainly not more useful than horses and cattle, than corn and wheat, than apples and grapes. If bees are to be exempted, why not these? I will go further: If bees are to be exempted, why not exempt the houses and barns, and all other improvements that are the products of human labor? If you were to exempt these last from taxes, would not more and better houses be built? Would not better improvements be put on farms and lands? Certainly there would, by the same logic by which you show that freedom from taxation would improve the bee-industry.

Let us look at it first from a selfish point of view, from that of the bee-culturist. Would the prosperity of the farmer, the merchant, or manufacturer, which would certainly result from freeing them from the burdens of taxation, injure the bee-man? I think not. Their improved condition would enable them to patronize the bee-man more liberally. The demand for honey would be greater, and, of course, prices would be higher unless the supply were greatly increased.

It seems to me that the bee-man should look at this question with a broader view than that of his mere personal interest. He should surrender the whole question of the taxation of personal property, if he claims exemption for his own business. If he insists on the taxation of personal property at all, he must be willing to patriotically bear an equal share of the burdens of taxation.

W. O. FOLEY.

Greensburg, Ind., Aug. 23.

We think you are right, friend F. Bees are property, like any thing else, and we do not see any reason why a bee-keeper should not bear his just share of the general expenses of the county and State affairs. And now we think it is best to drop the discussion here, for there will be two sides to the question until the law settles the matter.

FOUL BROOD.

AN ACT FOR THE SUPPRESSION OF THE DISEASE IN CANADA.

By this mail I send you a copy of our foul-brood pamphlet, in the form of an official government bulletin, which has just been issued under the direction of our Minister of Agriculture, and a copy supplied to every bee-keeper in this province whose name and address could be obtained. An edition of from seven to eight thousand has been printed, besides a German edition for the use and benefit of bee-keepers who can not read English.

From this pamphlet you will see what we are doing here in Ontario toward the suppression and extermination of that curse of the bee-yard, foul brood. In six short months after taking the initiative at our last annual meeting we have a government "Act for the Suppression of Foul Brood among Bees," which is, perhaps, the best of its kind in the world, and have already got in under its provisions a great deal of effective work. I trust our American brethren of the bee-craft may follow our example, and earnestly set about the eradication of foul brood from their country. As there is considerable interchange of bees and honey between the two countries, we are concerned in your action in these premises, as you are in ours.

Our foul-brood inspector has been busy in his official capacity during the past two months, having overhauled hundreds of diseased colonies in different sections of the province, and

applied remedial measures which are eminently successful.

While the act under which we are working authorizes us to destroy by fire all colonies with the malignant form of the disease, and although some of the apiaries dealt with were fairly rotten with the disease, our inspector has not yet found it necessary to cremate a single colony. We cure the worst cases and forms of the disease, and we wish all concerned to know it. One indisputable and clear fact is worth a large number of theories. Under these circumstances I may be pardoned for suggesting to our American friends the wisdom and propriety of now ceasing to discuss unprofitable hypotheses, and settling down to work on this foul-brood question. Foul brood can be cured, and cured every time, by a simple hygienic process, and without the aid of the chemist, the druggist, or the drug doctor. This is a broad and radical statement, but I make it deliberately and advisedly. In the bulletin referred to, you will see how we do it. Two methods are given there—one by D. A. Jones and another by Wm. McEvoy, our inspector. Substantially they are the same, being both predicated on the same principle. We have faith in our works, and we wish to inspire you with the same faith. "Go thou and do likewise."

Without undue presumption I would further suggest that GLEANINGS summarize the two plans of treatment of foul brood given in our pamphlet for the benefit of such of its readers as may need the information; or, what may be better still, give the matter in full. The bulletin, as you will see, also includes the *act*, which would also, I doubt not, be interesting and profitable reading for them.

ALLEN PRINGLE, Pres. O. B. K. A.
Selby, Ont., Aug. 5.

We have been informed that foul brood is very much more prevalent in Canada than in the United States, and hence an act for its suppression became almost a matter of necessity. Our Canadian brethren are to be congratulated for the vigorous manner in which they have taken hold of the matter. The "Bulletin" referred to above is before us. It is issued by the Ontario Department of Agriculture, and is, therefore, under the official insignia of the government of Ontario. The method of cure is, briefly, the starvation plan—the one, and only one, in our large experience, which we practiced with success; and the same has been incorporated in the last three or four editions of our A B C of Bee Culture. As it has been already given three or four times in these pages, it will not be necessary to repeat it again. The act for the suppression of the disease, briefly stated, is as follows:

The Ontario Bee-keepers' Association shall appoint an inspector and a sub-inspector, whose term of office shall be for one year. The inspector shall visit any locality in the province of Ontario, whenever directed by the President of the O. B. K. A. If he finds the apriary diseased, he shall order the infected hives and colonies to be destroyed by fire, or be treated by any method which the inspector may deem reliable or safe. Any owner of diseased colonies who shall sell diseased bees, shall, on conviction, be fined not less than \$50 nor more than \$100, or be imprisoned for any term not exceeding two months. If any owner shall refuse to allow the inspector to examine his apriary, or should such owner refuse to destroy any infected bees and appurtenances, he shall be liable to a fine of \$50 for the first offense, and \$100 for the second and each subsequent offense. The O. B. K. A. shall include in its annual report to the Minister of

Agriculture a statement of the inspector's work—number of colonies destroyed, etc.

For a complete copy of the act, apply to A. Blue, Toronto, Ontario. In another part of the bulletin, before discussing the method of cure, the cause of the disease is assigned to rotten or decaying brood, either from chilling or otherwise. In fact, the inspector, Mr. McEvoy, lays particular stress on this. We can not believe that foul brood starts without at least the germs of that disease. We have had a great many colonies in the apiary during the spring that had more or less chilled brood; but they never developed into any thing serious. Rotten brood may be a favorable medium for the growth of the *germs* if they are *already* present in the hives; but we can not think that this is of itself a *cause*. We may have the very best of land in which to grow corn; but corn will not grow unless there is first the seed. Further on in the bulletin we notice that there is a difference of opinion as to whether it is necessary to scald or disinfect diseased hives. We have tested that matter very thoroughly in our apiary. At one time we took twenty that had contained diseased bees, and put in healthy bees on frames of foundation. In every one of the twenty, foul brood broke out in from one to two months. At the same time we tried another lot of about an equal number, putting diseased bees on frames of foundation in hives that had been scalded, and a complete and permanent cure was effected in every one. Where hives had not been scalded long enough, the disease reappeared. We are very certain that Mr. McEvoy is wrong in thinking or advocating that diseased hives taken from diseased colonies are harmless; and we are equally sure that Mr. Jones is right in advocating that all such should be disinfected. If the bee-keepers of Ontario get the impression that hives from foul-broody colonies will not again transmit the disease, they will find, sooner or later, that they are making a most fearful blunder. As Mr. Pringle says, it is better to be on the safe side; for, "if the disease might in one case in a hundred be so propagated, the precaution of disinfection would be amply justified." We are glad to notice that the act itself directs that all hives and appurtenances in contact with foul brood shall be disinfected.

THE HOFFMAN FRAME.

A GOOD TESTIMONIAL FOR IT.

I should like to add my experience with the Hoffman frame. Some 12 years ago I was keeping bees near Baptishtown, N. J., and used a frame $\frac{7}{8} \times \frac{3}{8}$. I bought some bees of A. W. Lundy, living at Frenchtown, N. J., the pioneer bee-keeper of that section. I think, in 1878. The frames had a bottom-bar $\frac{1}{2} \times \frac{3}{8}$. I liked them so well after using, that I made mine $\frac{7}{8} \times \frac{3}{8}$. Soon after, Mr. Lundy made the ends of his frames $1\frac{1}{8}$ or $1\frac{1}{2}$ wide, the top $\frac{1}{8}$ wide, for $\frac{3}{4}$ of an inch, with a top-bar $\frac{7}{8} \times \frac{3}{8}$. The bottom of

the end-bar was cut down to $\frac{1}{8}$, like a Hoffman end-bar. About this time I adopted the Hoffman frame, made with a bottom-bar $\frac{5}{8} \times \frac{3}{8}$, and used them until I came to Florida, in 1885.

Some of the advantages are, moving from one to any number of frames to one side to get at a central frame by using a screw-driver as a lever; can pick up one to four or five frames, and carry where you wish, and no danger of mashing bees. In moving a hive with empty frames, foundation, or, when full of bees, the frames do not slide together, nor do the bottoms strike, nor are they ever *stuck* together. The bees are more easily confined at the top of the hive, as the ends of the top-bars are close fitting, and in the winter and spring the top corners of the frames, the hardest part of a hive to protect, forming virtually a dead-air space, while the narrow bottom-bar allows dead bees and debris of all kinds to drop to the bottom-board. To be used without reversing for box honey, I believe it has no superior. I forgot to say, that, with a narrow bottom-bar, combs are built clear down to the bar.

The bees built very few mounds from the bottom-board. The top-bars form practically a queen-excluding honey-board, and much less comb is built between frames and sections than where plain $\frac{1}{8}$ top-bars are used, and much less propolis is used.

When used with a dummy at the side of the hive there is no difficulty in getting the first frame out; or where side boxing is practiced. Many other advantages that have been mentioned I need not recall; but for certain localities, methods of management, and certain individuals, I think they are the best. Jno. B. CASE.

Port Orange, Fla., Aug. 22, 1890.

BEES ATTACKED AND DRIVEN OUT BY RED ANTS.

THE RED ANTS OF TEXAS.

On the 22d of July, bees commenced robbing a hive that was strong but queenless, early in the morning. I closed the entrance to about $\frac{1}{2}$ inch, and left to go to my work. I got back about 11 o'clock, and found the combs broken down and honey running about the ground. I had to open the entrance to give more ventilation, and by night they were completely whipped out. The next day we had a heavy storm. The wind blew two 12-inch boards that were fastened together in among my hives, spread the contents of four all over my ground, and broke the cover and side of another. It may have been some minutes before I discovered the mishap, and it was raining and blowing so hard that it was a hard matter to stand under it, and some little time before I could get the hives set up and the frames of lower and upper stories in place. Very few frames had broken combs, but most of the bees lay drenched on the ground. Upon examination I found two queens missing. Next evening I was called up. Bees were swarming. I found a colony of red ants had left their nest and invaded one of the hives that had lost its queen. There were ten ants to one bee, I should think. The bees had no chance. The hive was full of ants, covered with them. The ground for yards around was covered. Thousands had wings and thousands without. Their sting is worse than a bee-sting. They were evidently mad, and to go among them was to have them all over you. The hole into their nest was close to the hive. Several times I had buried a bottle and caught a lot of the ants, trying to destroy them. It seemed a premeditated plan of retaliation on the bees. The bees went into a tree.

I hived them several times, but they refused to stay anywhere but in the tree. I placed a box over them, and after several days of wind and rain they went up into it. I smeared them well with honey, and emptied them into a hive that was rather weak. Next morning they all lay dead outside. My experience this year has been, out of seven swarms hived on foundation, empty combs, or empty frames, 4 went off; out of 22 hived with a frame of brood, none went off.

Is the following, reason or instinct? A large spider was chasing a small one in a bush. A line of web ran from the bush to the top of a fence. The little one ran up the line and the big one after him. When about half way, the little one was nearly caught, and he turned round and bit the line in two. He fell to the fence, and the big one back into the bush.

Lytle, Texas, Aug. 8. GEO. E. HAILES.

Friend H., you surprise me by saying that the sting of the red ant is worse than that of a bee. They must be much larger, I presume, than any ants we have here. Perhaps Prof. Cook can tell us something about it. Why didn't you pour coal oil on the ant colony? Surely that would have "fixed" them.—Your testimony in regard to preventing new swarms from absconding, just about accords with our experience.—About the spiders, I should not call it either reason or instinct, but only an accident. I can hardly believe the small spider "figured out" that cutting the rope would give him the advantage.

RAMBLE NO. 28.

IN STEUBEN COUNTY.

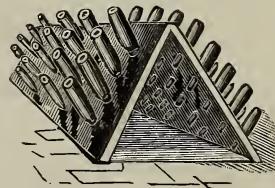
We found, after a few day's trial, that the county-house of Steuben Co. is a model institution. Mr. Eli Carrington, the keeper, has held his position for eighteen years. The inmates are well fed and comfortably clothed, and their spiritual wants are attended to by hearing the gospel preached nearly every Sabbath.

It is well known that temperance advocates lay much stress upon the poverty-producing qualities of a too free use of the bottle. In our investigations in this home of the poor we found substantial proofs of the statements. Mr. C. informed us that fully two-thirds of the inmates were brought there either directly or indirectly by the use of intoxicants. Here is a man with a leg off, caused by injury by cars, while drunk; here is an excellent carpenter, able to earn the highest wages in his trade—is handy at repairing or making articles at this place; but just as soon as he earns money it goes for drink, and he becomes a most degraded drunkard. Here is a young man, strong, healthy, and capable of earning good wages on a farm, and making himself an influence among his fellow-men; but the earning of a little money allows him to invest in degradation. So we might enumerate other instances of wasted lives. But, oh! the saddest scene of all is a death and burial of the poor—no friends to shed a sympathizing tear. A few men deposit the body in its final resting-place, where no mark is put up to indicate that a human being is there buried. A minister preaches a short sermon to the living inmates, and they are soon forgotten. The sad lessons learned from these paupers, and the cause which led to their misery, will ever be remembered by the Rambler.

Bath has several fine churches. We attended the Baptist and Presbyterian. In the latter we

found a very large Sunday-school, and what is reported to be the largest young men's Bible-class in the State of New York. There were over 150 in the class, taught by the editor of the leading paper of Bath. We found one of the secrets of his success in the *personal* work he devoted to the cause. His religion seemed to be the every-day kind, and the seasonable word was spoken at all times and occasions. Would that Sunday-school teachers would go and do likewise all over our land!

With the county-house as a center we directed our rambles in various directions. One very interesting point visited was Hammondsport, on Keuka Lake, the very center of the great grape-growing industry of the State. The climate near these lakes in Central New York seems to be adapted to small-fruit culture, and especially grapes; but on the shores of Lake Keuka seems to be the natural home of this rich fruit, and thousands of acres are under cultivation. Thousands of tons of grapes are shipped in baskets and crates to be consumed according to nature's way; but tons are also used in the manufacture of the various wines known to the trade. The Pleasant Valley Wine Co. is the largest concern of the kind, and uses tons of grapes. The process in its first stages is much like making cider from apples. A similar grater is used, and for expressing the juice a Boomer & Boschert press is used. The wine is then kept for a time in large tanks. It finally is put into bottles, and stored in a dark cellar. Candles were lighted, and we passed between long rows of bottles piled up like stove-wood, several thousand bottles in a pile. After some weeks they are taken from this pile and inserted, cork down, in long racks, where they remain a long time, but being often disturbed, and put back again. In hot weather the men who handle the bottles have to wear wire masks over their heads, for there is danger of being severely cut by bursting bottles. Our guide had his hand bandaged from such a mishap; and though it was cool weather at the time of our visit, we could often hear the pop of a bursting bottle. Our guide informed us that about



RACKS OF WINE-BOTTLES.

thirty per cent of the wine and bottles was thus wasted. Coming to the upper regions again, we were shown machinery for washing, for filling, corking, tinfoiling, and labeling the bottles, until finally they looked so enticing the Rambler thought of getting one into his pocket; but a reconsideration prevented. We imagined how we should like to see the honey business just boom in this way, and see all of this work done in a factory for preparing honey for market; but this, perhaps, is an idle dream, for honey does not pander to the perverted taste and passions of men.

Our guide finally led us into a little carpeted room with easy-chairs and a round table, and invited us to sit down. Several bottles and wine-glasses were procured from the next room, and said he. "Gentlemen, what will you take?" My traveling companion said he had no choice. The Rambler said his choice was not to drink. A bottle of champagne was, however, opened, and the glasses filled. Ah! it appeared to be good wine; it

worked aright in the glass, sparkling like so many rays of light. It looked very fascinating. Our traveling companion used up two glasses. Our guide also helped himself, but the Ram-



RESTING-ROOM. PLEASANT VALLEY WINE CO.

bler's glass was not emptied. We learned that there was much drunkenness about Hammondsport, and we were pointed to a farm on the hillside where a man had such conscientious scruples about the manufacture of wine from grapes that he pulled up his vines and devoted the land to other purposes. That the moral conscience of our whole land were educated up to this point is, the earnest prayer of

RAMBLER.

BEE BOTANY.

PROF. COOK NAMES A FEW HONEY-PLANTS IN MISSOURI.

Prof. Cook:—I send you by this mail a number of flowers which I should like to have you name through GLEANINGS, if not imposing too much on good nature. No. 1 is a weed that grows mostly on unenlightened or abandoned fields, and along roadsides, to a height of four to six feet. The flowers commenced opening the last week, and will continue until frost. I feel certain that it furnishes the greater part of our autumn honey here. Friend Root says it is a species of boneset.

No. 2 is a kind of creeping vine, not a native here. It blooms from about July 15 until frost, and the bees work on it almost continually when the weather is suitable. It is very hardy and thrifty. The roots seem to go a long distance under ground, and, where exposed, they sprout out and grow into vines. No. 3, I suppose, is a species of mint. It does not seem to be indigenous here, as I know of only one small patch. The bees work very vigorously on it.

No. 4, I suppose, is the heartsease that in some localities produces the principal crop of autumn honey, and was described some months ago by you. The bees work on it here occasionally, but it does not amount to much in the way of producing honey. We have two or three more closely allied to it, which grow in profusion on low ground, but bees seem to pay little attention to them.

Nos. 5 and 6 are not honey-plants, but furnish an almost unlimited amount of forage for cattle on the islands in the Missouri River. No. 5 is known here as sticktight or beggar-lice; it grows to a height of from 3 to 5 feet. On the sample I send there are flowers and seed not fully developed. When ripe, any one who walks through them, if he has on woollen pants, will ever afterward remember them.

No. 6 is known here as peavine, but it seems to be more of a bean. The pod, when ripe, has a peculiar habit of suddenly flying open, each side curling up, throwing the beans in every

direction. As you will see, I have just taken pieces of the vine.

S. E. MILLER.

Bluffton, Mo., Aug. 26.

Prof. Cook forwarded the above to us, and replies:

No. 1 is *Eupatorium serotinum*, or one of the numerous bonesets, all of which are valuable honey-plants. There are many species of this important genus in the United States. *E. serotinum* is said by Gray to grow in low grounds from Maryland to Illinois, and South. No doubt Bro. Miller is right in the opinion that this plant gives those in his vicinity the major part of their autumn honey. The bee-keeper who has ample marshes near his bee-yard is in luck, as the home of the eupatoriums is in our marshes.

No. 2 is matrimony vine, *Lycium vulgare*. This is introduced from Southern Europe. It is planted, and, as Mr. Miller suggests, has run wild in some sections. It belongs to the nightshade, or potato family. I have often heard of this as a valuable honey-plant. If bee-keepers who live where this is hardy wish a shrubby vine, this is a good plant to grow. This family contains the potato, tomato, night-shade, tobacco, ground-cherry, etc. It is not very rich in honey-plants.

Mr. Miller is right again, for No. 3 is a mint. It is known as mountain mint, *Pycnanthemum muticum*. No wonder the bees work on this vigorously. The mints are wonderful honey-plants, and it seems to me to be more independent of the weather than do most of our honey-plants. It occurs to me that, if any plants are worthy of cultivation exclusively for honey, they are some of the perennial mints. I am in hopes to cultivate, in a small way, numerous mints in hopes to find the best honey-plant in the family.

No. 4 is the famous heartsease, *Polygonum Pensylvanicum*. It seems that this plant does not secrete in all places at all times, or else has rivals that attract the bees from it.

No. 5 is tickseed, or bush trefoil, *Desmodium Dilatatum*. It is one of the members of the clover family.

No. 6 is also one of the pulse, or clover family. It is *Phaseolus helvulus*, or wild bean. It is rather strange that these last are not honey-plants, as so many of the leguminous are.

Agricultural College, Mich. A. J. COOK.

ODD-SIZED HIVES.

THE TRIALS OF ANOTHER DISGUSTED BEE-KEEPER.

We were greatly entertained with Rambler's account of Blake's tirade. Poor Blake has our heartfelt sympathy: for, next to a smoky chimney, an odd-sized bee-hive is the meanest thing on earth, and this I know from an aggravated experience. When we began bee-keeping we were sweetly beguiled into buying "Controllable" hives; but what they controlled we have failed to find: certainly not our temper, for not a supply-dealer kept any thing to fit; every thing must be made to order, costing more, or we must patch up as best we might, making needless work: and when done it resulted in some amusing experiments—amusing now in the light of added experience, but far from it at the time.

Our next venture was, at a time when swarms appeared faster than hives, to buy second-hand Simplicity hives from an accommodating townsman: but, alas for our ignorance again! We had no regular bottom-boards, but were told to let the hive project just far enough over the end

United States (or at least have been until quite recently) *great factories* built up to make electric belts, medals, and charms, to cure diseases, while every educated man knows that they have not the remotest effect whatever on disease of any sort. In fact, there is not even any *electricity* about them. People feel bad; and if they do nothing at all they almost always feel better after a while. In the meantime they purchase these advertised trinkets, and then give the *trinket* the credit of the cure. Of course, we are a little ahead of the Chinese, and the heathen with their signs and taboo, but I am sure that the large amounts of money that have been constantly paid for patent medicines, and, in fact, for almost all kinds of medicine, is a great mistake and a blunder. People who take no medicine at all are just as well or better off. I wish those words of Dr. Holmes might be rung out over land and sea, until they reach every household. A certain remedy or a certain doctor gets to be the rage, and nobody discovers that the whole thing was only a hallucination until thousands of dollars have been wasted and thrown away. Our friend touches on hoarhound honey. Perhaps he has not noticed that we have it for sale by the hundreds of pounds, if wanted; and it is as strong of hoarhound as is hoarhound candy. To me it is delicious with my bread and butter; but I have not a particle of faith that it has any remedial virtues whatever; in fact, I can hardly believe that hoarhound in any shape has any effect whatever on coughs and colds, but the hot water taken with it *may* have. Now, dear friends, it may be that I am going somewhat to extremes in this matter of medicine and remedies; but I think our intelligent readers must admit that there is at least a great amount of truth in my position. I do not mean to reflect on our regular physicians, for I believe that most of them understand me, and believe, at least to a great extent, just as I do. Take the advice of an intelligent and progressive physician of the present day, and you will not take very much medicine.

STRONG EVIDENCE FOR ONE AND THREE-EIGHTHS SPACING.

THE TESTIMONY OF BARON BERLEPSCH AND OTHER EMINENT GERMANS.

I am glad to find that you give the matter of spaced frames so much attention in your valuable paper, as I think successful bee-keeping demands a brood-frame with fixed spaces. If so, we should certainly know the exact and right distance from center to center. Why the bee-keepers of this country differ so much yet in regard to the exact measure of spacing brood-frames, I can not understand. There is only one way to get this distance right. It is, to find how far the bees, when left to themselves, build their combs apart in the brood-nest. About twenty years ago I settled this matter to my own satisfaction. I began by using a spaced frame of $1\frac{1}{2}$ inches from center to center, and

found that distance too wide. At that time I used, in hiving natural swarms, only small starters in the frames, and I found the bees would, in building down their combs, invariably draw in the combs toward the center of the brood-nest, so that the lower part of the comb would be built out of the frame. They would do so until I reduced the space so as to measure only $1\frac{3}{8}$ from center to center. As this matter seems to me to be of great importance, I will here quote from whom I believe to be the best authority on the subject. The Baron von Berlepsch, in his unequalled work, *Die Biene und ihre Zucht* (The Bee and its Culture), says: "Dzierzon, the inventor of the movable comb, gave $1\frac{1}{2}$ as the right distance, until Wieprecht* made exact measurements on straw hives that were built out with straight combs. He found, that, although some variations were noticed, in 49 measurements the average distance from center to center of combs was $1\frac{5}{16}$ inches.

"The correctness of this statement, I (von Berlepsch) can affirm with the utmost certainty, as I, in company with Kalb,† also made 49 measurements, the result being $1\frac{5}{16}$ inches as to the average distance."

The German foot is $\frac{1}{4}$ inch longer than ours; therefore $1\frac{5}{16}$ in. of Berlepsch's German measure would be equal to $1\frac{1}{2}$, or scant $1\frac{3}{8}$, of our measure. But as the wood of the frames will shrink, and also wear off some, I make the close-fitting parts of my frames exactly $1\frac{3}{8}$ wide, and I believe this to be the best width. To make the spaces more than $1\frac{3}{8}$ will be antagonistic to the nature and well-being of our bees.

If we, for instance, space the combs from center to center so as to measure $1\frac{1}{2}$ instead of $1\frac{3}{8}$ inches, then we have an empty space of $\frac{5}{8}$ inch between two combs of brood instead of $\frac{3}{8}$, as it ought to be; and it will certainly require more bees to fill and keep warm a $\frac{5}{8}$ than a $\frac{3}{8}$ space. In a $\frac{5}{8}$ -inch space, the breeding bees from two combs facing each other will join with their backs, and so close up the space between the two brood-combs; if this space is widened, however, to $\frac{5}{8}$, the bees can not do this, and more bees will be required to keep up the needed brooding temperature. What a drawback this would be in cool spring weather, when our colonies are weak in numbers yet, and breeding most desirable, can readily be understood.

My hives hold 11 brood-frames. If I space them $1\frac{1}{2}$ the bees would have to occupy an $1\frac{1}{8}$ -wide space of unnecessary and useless room between the brood-combs through the whole length and depth of the hive, as compared with $1\frac{3}{8}$ -spaced frames. Wider spacing than $1\frac{3}{8}$ will also favor and encourage the building of drone-cells and the raising of drones.

In conclusion I will say, Use spaced frames, and have them not more than $1\frac{3}{8}$ apart from center to center.

JULIUS HOFFMAN.

Canajoharie, N. Y., Aug. 23.

Many thanks, friend H. The evidence that you present out of your long and extended experience, for $1\frac{3}{8}$ spacing, seems to me to be convincing. At first I thought Nature was against us in urging $1\frac{3}{8}$ inches; but I am very glad to believe that she is on our side, although my good friend Doolittle may argue that she is on his side. If the bee-keepers ultimately adopt fixed distances it is highly important that this distance be settled accurately in the first place. Berlepsch (whose most valuable researches we

*A noted bee-keeper and writer.—J. H.

†A prominent bee-keeper.

value so highly), as we well know, was very careful in his experiments, and his conclusion can not be lightly esteemed. Unless some one else shall bring some incontrovertible evidence to the contrary, let us consider $1\frac{3}{4}$ spacing as the right distance for the average bee-keeper. Perhaps I should remark that friend Hoffman prepared the article above in response to my request made to him in person while I was visiting at his home. In my Notes of Travel I will give an account of my visit to his place later.

ERNEST. .

ZINC QUEEN-EXCLUDERS.

A SPLENDID TESTIMONIAL FROM A CALIFORNIA APIARIST.

I have taken so much comfort with my 450 zinc queen-excluders this season, I am sure it will be doing my neighbors a kindness to tell them how they work. My hives, and, in fact, nearly all the hives in Ventura County, are made with a bee-space in the bottom and top of both super and brood-chamber, which, when the super is on, leaves $\frac{3}{4}$ of an inch space between the super and the brood-frames. I have always thought this a mistake; but when I began to think of using queen-excluders, I saw that, if a plain unbound zinc excluder, the size of the outside of the hive, were laid on the brood-chamber, and the super on the excluder, the bee-spaces would be all right. I ordered 480 of Root's No. 1 unbound zinc excluders, large enough to fit my hives. I think No. 1 the best, because they allow the bees to pass up and down more freely than the break-joint excluders. After trying 450 of these unbound excluders one season, I am satisfied that they are better in every way than the bound excluders. The super is easily lifted off the zinc, and, by taking hold of one end of the zinc and pulling up and out, they can be peeled off almost like cloth; and if they bend a little, just turn them upside down when you put them on again. I bought the excluders because I had a good many drone combs in my supers; but I would not do without them now, if my super combs were all worker size. It makes a fellow feel good to open a super just before swarming commences, and find about a square foot of drone comb all cleaned up for the queen to lay in. It is ever so much nicer to fool the bees in this way than to shave the heads off the drones. You don't always get around in time to shave the drones' heads off, and what a lot of honey is wasted in rearing them!

When you have no excluder on a ten-frame L. hive, the bees will fill about 7 combs in the brood-chamber with brood, and then run it up in the super instead of filling the brood-chamber clear across. This brood in the super is a great nuisance when you are extracting. In California we leave our supers on all the year round; and if the super is full of honey in the spring, the bees will build up faster than they would if the hive were contracted. Another point I did not discover until I put excluders on all my hives: When the queens are allowed to go into the supers, a good many are knocked off on the ground, and lost, when brushing the bees off the combs. I did not find a fourth as many queenless colonies after extracting this season as usual. I found a few queens that could run up and down through the excluders, but not enough to trouble seriously. If I had my choice, however, I would have the perforations $1\frac{7}{16}$ of an inch wide, instead of $1\frac{3}{8}$. I have been experimenting by putting queens in a little box, and

covering it over with different sizes of perforated zinc. I found but few queens that would crawl through the $\frac{1}{16}$ perforations, but could not find any small enough to go through the $\frac{1}{16}$; and I could not see that it made any difference to workers.

It is easier to take honey out of a super if you have a queen-excluder under it, because the bees do not build so many brace-combs below the super combs. Other large bee-keepers around here are experimenting with them, and I think all the progressive ones, Mr. Mercer included, will soon have them on all their extracting hives. Nearly every bee-keeper who comes here and sees how they work, says, "I wish I had them in my apiary." J. F. MCINTYRE.

Fillmore, Cal. Sept. 1, 1890.

You have given us some valuable testimony, friend M., for the perforated zinc for extracting. This and the bee-escape promise to work almost a revolution in the methods of producing extracted honey. You are exactly right, friend M., as to the size of the perforated zinc. By careful experiments which we have been making, we decided that $\frac{1}{16}$ was correct. Before us is some of Dr. Tinker's beautiful zinc, and it is a pleasure to us to say that his zinc so far stands at the head. By carefully measuring, we find that the width of his perforations strikes $1\frac{7}{16}$ exactly. The fact that all three of us arrived at this conclusion independently—you in California, and two of us in Ohio—makes the evidence almost conclusive that $\frac{1}{16}$ must be correct. We are at work on a new set of dies. They are to be ganged to this size as nearly as the best machinery can be made to do it. Mr. Alyah Washburn, who made the original comb-mills, and who, in fact, has done all our fine work, is to make the dies, and we hope ere long to have a zinc that no queen will go through. Our old zinc measures about $1\frac{8}{16}$, and that is the reason why we change.

Quite incidentally, friend M., you mention another point. In a Langstroth hive, you say bees will fill seven frames of brood, and then go into the super instead of filling out the brood-chamber clear across. That is just the reason why I advise everybody to use the eight-frame hive. In the name of common sense, why have a hive any larger than the average brood-nest? We want the bees to fill the brood-chamber entirely with brood, or very nearly so; and then if they are able to get any honey we want to compel them to put it just where we want it—in the supers.

E. R.

GOLDENROD.

THE BEES ARE JUST "WHOOPING UP" THE HONEY FROM IT IN MICHIGAN.

Our aged friend J. L. Davis, of Holt, Mich., once said to me: "I am very fortunate in the large marsh" which extends for some distance in front of his house. Many people would not appreciate readily the wisdom of this remark. A marsh for a dooryard and constant outlook is not generally among the aspirations of those aesthetically inclined. But should such a one visit friend Davis at this season, and look out

upon his field of autumn bloom, with the goldenrod predominating, he would hardly criticise our venerable friend, even from the standpoint of aesthetics.

But aesthetics was not in our friend's mind; he was thinking of honey and his pocket-book, and well might he; for, many a year his chief honey product has been from these same autumn flowers.

Friend Root, you and I have pictured to ourselves the joy which must come to the desert pilgrim as he comes to an oasis. Well, that is the Michigan bee-keeper's condition just now, who has a wealth of autumn bloom to draw upon. Our bees have been idle the whole season till now, when they are just "whooping it up" as our boys say. We can smell the honey in the evening for rods from the apiary.

I wish, Mr. Editor, any skeptics on the matter of goldenrod as a honey-plant might visit me now. Our bees are just swarming on it. Yesterday I saw asters, goldenrods, bonesets, and the tall sunflowers just alive with bees. I have never seen bees very much on the sunflowers (*Helianthus*), and so was very much interested in this observation. We find the bees are not working much on the buckwheat. It may be because they prefer the autumn flowers. If this is the explanation, we are glad of their preference, as we prefer the goldenrod to the buckwheat honey. A. J. COOK.

Agricultural College, Mich.

We are very glad indeed, friend Cook, to know that we are going to have some honey, even if it does come at the eleventh hour.

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

QUESTION 168.—*I want to start an out-apiary, and will have to haul my bees back and forth, fall and spring. Would you advise me to adopt some device to space the frames at fixed distances, for the sake of security in hauling, and to make sure of exact spacing?*

I would.

Illinois. N. W. C. MRS. L. HARRISON.

I think it would pay you well to do so.

New York. C. G. M. DOOLITTLE.

Until I learn better I should advise you to do so.

New York. C. P. H. ELWOOD.

I am not authority, but I think not. How is this, Dr. Miller?

Michigan. C. A. J. COOK.

For this, as well as for several other reasons, I want my frames at fixed distances.

Illinois. N. C. J. A. GREEN.

I use small blocks between the frames at the bottom for moving short distances. The tops will usually stay in place. It is a very short job to block the frames perfectly secure.

Ohio. N. W. H. R. BOARDMAN.

If I were hauling my colonies I should take care to have my frames stationary. A device such as we use for shipping bees, placed on top of the frames, at the front and back, keeping them apart, is sufficient, and is easily put on and taken off.

Ohio. S. W. C. F. MUTH.

I have a horror of fixed frames, and therefore advise the questioner to do a pile of thinking about other devices first. Perhaps for that style of gipsy bee-keeping that keeps continually roving about, fixed frames may be best.

Ohio. N. W. E. E. HASTY.

I would advise you to use my patented hive. There are two reasons why I might give such advice—one that I am dealing in them, and the other that I think it to be the best for the purpose you mention and every other. I leave you to decide from which I gather my inspiration.

Michigan. S. W. JAMES HEDDON.

I've used movable frames a quarter of a century, and they have always been *movable*. I never tried a fixed frame, and it seems to me I should feel hampered with them. Still, in hauling, a hive would be more movable if the frames were immovable. If a somewhat exact distance is required to avoid brace-combs, fixed distances may become a necessity.

Illinois. N. C. C. MILLER.

That depends upon whether you handle your combs and bees or not. If you manipulate your combs as I do, I answer, no, but have spacers to apply when hauling. But if you do not overhaul your bees occasionally it is well enough to have the combs at fixed distances, or, what would be as well, nail them down with 10-cent nails; or, what would be cheaper still, use old-fashioned box hives or log gums.

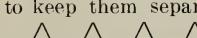
Vermont. N. W. A. E. MANUM.

That depends. If the frames are fastened to the quilt or honey-board by the bees, and you use a spring wagon, I should say no. If a wagon without springs is used, and six or eight inches of straw is placed under the hives, and care is exercised in driving, there will be no need of fastening the frames. I have taken them in the last way ten miles, and not a frame broke loose.

Ohio. N. W. A. B. MASON.

Yes, I would advise you to adopt (or, better yet, invent) some simple device for holding the suspended frame when moving; and if patented I should like an interest in it to the extent of one individual right, for it has been a great bother to me to fasten frames when moving. If I could have the Quinby closed-end in moving, and the Gallup after they were moved, I should be suited; but I don't know of any sleight-of-hand whereby I could change them at will.

Wisconsin. S. W. S. I. FREEBORN.

All the frames of our hives have a space-wire to keep them separated at the bottom, thus:  and as the arms of the suspended frames are glued to the rabbits, we haul our bees from one apiary to another, when necessary, without any other device, *in spring*. But we would not haul them in the fall, when the combs are full of honey, without fixing them by small wire nails half driven in the arms. See pages 167, 168, of our book.

Illinois. N. W. DADANT & SON.

If it is necessary to haul bees to and from the out-apiary I should by all means adopt a close-fitting end frame of some kind. We are just moving an out-apiary in which half of the hives have closed-end frames, the others hanging. The closed-end frames can be prepared in a minute without opening the hive. The loose frame requires any amount of tinkering and waste of time. If loose frames are used I should certainly apply some of the many devices for keeping them at fixed distances. Any device

that is to be put into the hive and taken out again is a nuisance, and liable to get lost or broken.

New York. E.

RAMBLER.

For a hanging frame we don't use any thing to keep the frames at fixed distances. Any device to keep the frames at fixed distances would necessitate a movable side to the hive. When we move bees in the L. frames, we lay a piece of our frame timber $\frac{3}{8}$ x $\frac{1}{8}$ flatwise across the ends of the frames, and drive 3 or 4 wire 4-penny nails down through the piece and the frame below, into the rabbets of the hive. That will hold the frames secure. Then confine the bees as you please, and go ahead.

Wisconsin. S. W.

E. FRANCE.

No. I would secure with staples across the center of the bottom-board a piece of No. 12 wire, bent like a worm fence, or thus: This interferes but little in setting the frames in the hives, and prevents the swaying motion in hauling. Then I would keep a set of notched strips of tough wood the length of the width of the hive, $\frac{1}{2}$ inch wide by $\frac{1}{8}$ inch deep, cutting the notches $\frac{1}{2}$ inch deep; place these down on each end of the top-bars while hauling, thus:

Frames are thus spaced and stationary, but free when wanted so.

California. S.

R. WILKIN.

I am surprised to note that so many recognize the *need* of something to hold the frames at fixed distances. It is true, in some localities, hanging frames can be hauled without fixing; but even then, the lives must be on springs or loose straw, and, worse than all, slow and careful driving is necessary. We have tried it, and know. Another thing, there are localities where hanging frames could not be hauled without fixing. See Notes of Travel at Elwood's, elsewhere in this number. If fixed frames, or, if you choose, closed-end frames, can be manipulated as rapidly and as easily as the hanging frame, why bother with the latter? Note particularly what Rambler says, and also what is said elsewhere, regarding the rapidity with which Elwood handles closed-end Quinby frames.

E. R.

HEADS OF GRAIN FROM DIFFERENT FIELDS.

MICHIGAN BEE-KEEPERS' STATE MEETING.

I wish early to call attention to the Michigan State Association, which holds its next meeting on New Year's day at the city of Detroit. It will be remembered that the Detroit meeting of the National Association was one of the best ever held. We propose that this next State meeting shall come well up to that grand one. We hold it on New Year's day so all can get half rates. We hope for a very large attendance from Ontario, New York, Ohio, Indiana, and other States. It is to be hoped that all will plan before hand to be on hand, and that the very poor honey season may not keep any one at home.

A. J. COOK.

Lansing, Mich.

HOW TO GET RID OF DRONES.

We are having quite a honey-flow from what is commonly called "smartweed," which, by the way, as you doubtless know, makes the very finest honey. All of my 25 colonies are rushing out and in at a furious rate, with just one exception. From one hive but few bees have been going out and in, while a good many loafed around the entrance. The few that did go out to work went and came in a lazy, dragging fashion, quite in contrast with the busy rush from the other hives. Upon examination by lifting out a frame, I found that, while they had some sealed honey and a considerable amount of brood, the hive seems literally overrun with drones. I estimated the number at fully half the swarm. Now, what shall I do to get rid of these fellows, as they will undoubtedly eat up the whole store and leave the colony destitute?

I wintered 11 colonies last winter, and increased this season to 25 by natural swarming. They have made no surplus yet; but I think, with the exception of three or four late swarms, they will be in excellent condition, for winter. The honey-flow will probably continue here three weeks, or till about the middle of September, so I may get some surplus yet.

Waterman, Ind., Aug. 25. M. STURM.

Your queen is evidently a drone-layer. Replace her and trap out by perforated zinc the surplus of drones.

THE ROCKY MOUNTAIN BEE-PLANT—A REPORT FROM ITS NATIVE HOME.

Friend Root:—I address you thus familiarly because of the friendly way you have of talking in your A B C book, which came promptly to hand, together with 25 cts. returned, on account of clubbing with GLEANINGS. This was altogether unexpected. Is the inclosed sample of our most productive honey-plants in this vicinity the spider-plant, illustrated on page 253 of said book? You will see that it differs somewhat, as this has only three leaves on a stem, and the seed-pods all hang down, even when very small; and instead of the flowers opening about sunset they are open all day and covered with bees the whole day long; and instead of from 12 to 20 flower-stalks to each plant, I should say from one to two hundred. The small stalk that I picked this sample from had 57 more like it, and is only about two feet high, while there are thousands of them from five to six feet high on high ground, with no water. There is one peculiarity about the plant that you do not mention, which makes me think that they are not identical. This plant with us is something like the bee, being very sensitive. If let alone or handled very gently it is all right; but if you strike it a blow, or kick, or handle roughly, it instantly gives out a very strong and disagreeable odor—that is, the stalk and leaves, but not the blossoms. Its thriving so well on all kinds of soil, by the roadside or on hard dry clay, and with no water, makes it the honey-producer of this vicinity, at this season of the year, for it is always ready, whether the alfalfa crop is in bloom or has been cut and stacked.

If I can give you any further information concerning this Rocky Mountain country I shall be happy to do so in my humble way.

HOMER BROWN.

Taylorville, Utah, Aug. 30, 1890.

Friend B., the plant you send is not the spider-plant, as you suppose, but only a near relative. The spider-plant is *Cleoma integrifolia*, while this is the Rocky Mountain bee-plant, or *Cleoma pungens*. The flower of the spider-

plant is very much larger; besides it differs in other ways. As they so strikingly resemble each other they are often confused. While the spider-plant bears transplanting as well as a tomato, the Rocky Mountain bee-plant is very touchy, and it must be handled in transplanting with the greatest care, or it droops and dies at once. I have before noticed the sensitive peculiarity you bring out so vividly. It seems to be one of the high-toned plants. Prof. Cook has already tested it as a honey-plant by the acre; but it does not take as kindly to our soil and locality as it does with you. We shall be glad of any information as to the quality and quantity of honey it produces in its native wild. Some of the seed-catalogues have been giving it an undeserved boom, under another name.

ASAFTEDA TO STOP ROBBER BEES.

I have used it two or three seasons, and find it good, that is, on colonies that rob through a poor honey-flow. They go in and out without being detected. I had one colony that was going it strong this season; but after a 5-cent cake of asafteda had been on their bottom-board 12 hours they were challenged as soon as they entered a hive; and as they could not give the password they were soon ejected or killed. Their perfumery gave them away.

SAMUEL HEATH.

Tidal, Pa., Aug. 23, 1890.

I am not surprised at the result of your experiment, friend H. Asafteda has so pronounced an odor that it enabled the bees to tell their friends from their enemies without trying very hard.

HONEY FROM THE COTTON-PLANT.

I have been out peddling honey to-day. I sold \$27.00 worth at 11 cts. I send you a small sample of it. The sample is cotton honey; that is, it is from that source. In examining your A B C in regard to honey-plants you say nothing about honey from cotton. My bees made 2 lbs. per day for two weeks from cotton. I could give you an idea as to all of our honey-plants, but probably with no interest to you. I shall get about 20 lbs. of surplus, on an average, from my bees.

J. F. TEEL.

Elmont, Texas, Aug. 15, 1890.

The sample of honey received compares favorably with clover honey, both in flavor and color, and is much above the average quality of southern honey.

TOMATO JUICE FOR PROPOLIS.

There is one thing I have just discovered that I never knew before, and that by accident. I had been taking off honey, and had my hands well stuck up with propolis. As I had some tomatoes that needed fixing up I got some of the juice of the vines on my hands. When I came to wash, and rub soap on my hands, the propolis came off in a hurry. If I had known that years ago it would have saved me much trouble.

JAPANESE BUCKWHEAT FOR HONEY COMPARED WITH COMMON.

I wish to write a word about buckwheat, as this is a buckwheat section. Last year there was some of the Japanese buckwheat sown for the first time near here. To-day I thought

I would examine and see how the bees were working. I looked at a piece that had Japanese and the common buckwheat, both sown in the lot side by side. The day was good, and the buckwheat was fresh and nice. I think by the looks that there were ten bees on the common to one on the Japanese. How is it in your section?

BEN FRANKLIN.

Franklin, N. Y., Aug. 25, 1890.

Friend F., your valuable fact reminds me that, when a boy, we discovered that tomato-juice would remove butternut stains and gummy matter from the hands. There must be a peculiar acid about the tomato that makes it a solvent for certain gums.—Your report in regard to buckwheat is only accidental.

WON'T HAVE TO FEED.

A drouth that lasted for seven weeks ended July 20th here; since then we have had plenty of rain, and the vegetation and flowers have returned like spring. Bees here have been doing nicely since the drouth. They have filled their brood-chambers to running over, and the supers have caught lots of it. I took off the supers that were full about a month ago, and supposed the season to be over as usual; but the bees refused to stop storing, and went up under the covers; and before I found them at it they had built several pounds of honey in some of the hives. I put the T supers on, and the bees seem to be happy. The honey this year is mixed with honey-dew, but the bees winter nicely on it here, and it will save feeding—a thing I have had to do for several years.

S. S. LAWING.

Henderson, Mo., Aug. 28, 1890.

Friend L., you also point a good moral. Keep an eye on your bees, and see what they are about; even if they haven't done a thing for weeks, they need watching all the same.

THE HOT WAVE IN CALIFORNIA.

In my last statistical report, dated July 25, I stated that the prospect for an average crop was excellent. The hot wave had then just reached us, but I did not at the time suspect its ultimate effect. A few days after, the honey-flow stopped; and although the alfalfa has been in bloom during the whole of August, not a pound has been stored since the first week of this month. The bees seem to be getting barely enough for their own use. My scales have lost a trifle in weight. The crop will, therefore, be considerably shorter than expected. Much of the honey is dark, presumably from buckwheat-brush, gathered between the first and second blooming of the alfalfa.

W. MUTH-RASMUSSEN.

Independence, Cal., Aug. 29.

ITALIANS PULLING THROUGH WHERE BLACKS STARVE.

Many neighbors in the Osage River region lost nearly half their swarms (blacks) from starvation and moths during the July and August drouth. Now that smartweed (or lady-finger) and Spanish needle are coming into bloom, the surviving swarms are doing well. The swarms lost were in old-fashioned box hives, without frames. The few swarms I have (Italians) in Simplicity hives, pulled through the drouth nicely on a local supply of late-blooming sumac and buckbush. They are just now making most of their honey from Japanese buckwheat bloom.

LUCIUS GOSS.

Connely, Mo., Sept. 1.

REPORTS DISCOURAGING.

HONEY CROP A FAILURE IN NEBRASKA.

The honey crop in this county is an entire failure. All bees here will have to be fed for winter.

H. C. ALLEN.

Rising City, Neb., Aug. 9, 1890.

HONEY CROP WILL BE VERY SMALL.

The honey crop here is going to be very small, as the clover and basswood are gone, and no surplus up to this date. But little buckwheat raised around here.

LEWIS H. KNUDSON.
St. Ansgar, Ia., Aug. 4.

ONLY 125 LBS. FROM 35 STOCKS.

Put me down among the Reports Discouraging—125 lbs. of honey from 35 stands, and some of them in poor shape for winter. I will not quit for one crop like that. It would take two or three like it.

P. C. CHADWICK.

Loring, Kas., Sept. 7.

A POOR SEASON; 10 LBS. PER COLONY.

This has been a poor year for bees. They have not increased much, and some not any, and the honey is in about the same proportion. I think it will average 10 lbs. per colony, and the increase was about one in 10 all through the county.

A. E. BRADFORD.

Hammond, Wis., Aug. 8.

BEES HAVE DONE POORLY ALL THE SEASON.

Bees have done poorly all the season, barely making a good living. They killed off their drones in June, and there was no swarming to amount to any thing. I had four colonies in the spring; and of these, two cast two swarms each, making four all told. Two haven't swarmed yet.

W. J. MCADAMS.

Western, Neb., Aug. 28.

POOR FOR IOWA.

This has been our poorest season for honey so far for four years. Since basswood, bees have hardly made a living. We have so far taken about 5 or 6 cwt. of comb and 45 gals. of extracted honey. But as the old adage says, "It is an ill wind that blows nobody good." What little honey there is will bring a better price.

E. R. A. BRAINARD.

Postville, Ia., Aug. 12, 1890.

POOR SEASON: RECORD OF SCALE HIVE.

This has been a poor season for bees in this section. I have a scale hive which gained, June 6 to July 16, 20 lbs.; July 16 to 26, it went back 5 lbs. Our only hope now is buckwheat, of which there is a great amount. The earliest pieces are already in full bloom. Not one swarm in ten threw off new ones. I wintered 18, and got only one. The new hives may be useful next year.

L. M. CARPENTER.

Blooming Valley, Pa., July 27.

POOR CROP IN KANSAS.

GLEANINGS comes regularly, and I can say it does not come too often for me. I have received many good hints from it. It has been so dry in this part of Kansas this year that the bees will have hard work to lay by their winter stores. I have taken 4½ lbs. of comb honey from one hive, and that is all I expect to get this year. The pound of bees and the queen we purchased of you in May are now a strong colony; and if it had been a good honey season we might have had two or three colonies more just as strong.

Burlingame, Kan. ERNEST G. TERRY.

LAST YEAR, 3000 LBS.; THIS YEAR, ONLY 200 LBS. OF HONEY.

I had 3000 lbs. of honey last year, but this year it looked favorable in the spring up till the middle of June. Since then it has been very dry. I have taken only 200 lbs. so far.

Brighton, Ia., Aug. 9. W. A. SHAFNIT.

HONEY SEASON SHORT.

The summer honey season is over, and a very short one it was. I had 13 colonies, spring count, and have extracted 300 lbs., and increased to 28 by dividing. I haven't had a swarm this year. My bees are good and strong, and we hope to get a good fall crop.

J. H. HILL.

Venice, Fla., Aug. 25.

POOR HONEY SEASON: BLACKS BETTER THAN ITALIANS.

This is a very poor honey season. Bees have not swarmed in some places, and have not even gone up into the upper hives. My blacks have done better than Italians this year. I noticed in June there was a great slaughter among the drones, which will teach us hereafter what the harvest will or ought to be.

Peosta, Ia., Aug. 6. MRS. J. H. ALLISON.

SHORT CROP, BUT 20 LBS. PER COLONY.

My sections came in time for the basswood flow, which was late. It commenced July 20th, and lasted for three weeks. The flow was very light, about 20 lbs. per colony. There was no surplus honey from clover in this vicinity this year. The prospect of a fall flow is good if the weather holds favorable. As there seems to be a shortage all over the country, those who have a little will probably receive a good price.

FRANK DURAND.

Esdale, Wis., Aug. 11.

CLOVER AND BASSWOOD POOR, BUT SUMAC GOOD; SCALE HIVE; 7½ LBS. PER DAY.

The honey crop is rather light. There was and is the most white clover I ever saw, and the fewest bees on it. Basswood did not blossom much, and yielded scarcely any honey. The only plant that seemed to give a full crop was sumac, and 7½ lbs. per day has been the best done by the swarm on the scales (extracting) this year. My best hive (Italian), which was run for comb honey, has filled 120 sections. $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$. Another has filled 72, and are at work on 24 more, while about a dozen hives have done nothing in the sections. I have seen but 5 new swarms from my 50 hives. Buckwheat is in bloom, and bees are killing their drones. Too dry.

C. G. DARLING.

Lincklaen, N. Y., Aug. 8.

EXPECTS TO FEED: BLACKS DWINDLED WORSE THAN ITALIANS.

As our season for surplus is past, I send you a short report. Our honey crop is a total failure. We have taken only about 15 gallons of orange-blossom honey from 45 colonies, spring count, with an increase of about 50 per cent. Our colonies have dwindled very badly the past two months—blacks more than the Italians. Some stopped breeding altogether. No more blacks for me. I expect to have to feed all my colonies an average of 10 lbs. each to carry them over until October, when our fall flow comes. This is somewhat discouraging. But I have not lost my faith in the business. I am at work now getting out hives, supers, etc., preparing to start two out-aparies another spring. I believe in having every thing ready before it is wanted. I have had some experience in this line the past season.

ARTHUR F. BROWN.

Huntington, Fla., Aug. 8.

HONEY CROP EXCELLENT.

The honey crop is excellent in quality, and fair in quantity. From 54 stocks I have extracted about 2500 lbs. I have not had a large yield since 1878. Clover is a failure nearly every year, and basswood is largely cut off for lumber. Kennedy, N. Y., Aug. 11. W. H. S. GROUT.

SEVIER CO., UTAH. A GOOD LOCALITY FOR BEES.

Our honey-flow commences about June 15th, and ends Sept. 15th. The average yield is about 150 lbs. of honey to each colony, and 100 per cent increase of bees. At times we have more increase of bees and less honey.

Elsinore, Utah, July 28. N. B. BALDWIN.

A BIG HONEY YIELD THIS SEASON IN TENNESSEE.

We have had a big honey yield this season. I find in some of my hives (and it has continued so for many months) many bees almost perfectly black, and others almost pure Italians, seemingly the progeny of the same queen. Is not this contrary to theory? JAMES A. LYON.

Clarksville, Tenn., Sept. 4.

No; hybrids are often marked that way.

A GOOD YIELD FROM BASSWOOD AND CLOVER.

In this locality my bees have had plenty of clover and basswood to work upon; four swarms have stored, in 2-lb. sections, 260 lbs. This I took off at the end of the basswood flow. They are now at work upon buckwheat. Only one increase from these four swarms.

Union City, Mich., Aug. 29. S. D. BUELL.

A SMALL CROP, BUT THE HONEY GOES OFF LIKE HOT CAKES.

This has not been an extra year in honey. Our crop was about 600 lbs. from 60 colonies, but some of them were so weak in the spring that they gave no surplus at all. It is beautiful honey, and goes off like hot cakes—no trouble to sell this year. We had only six or seven swarms. We do not expect to get any surplus this fall, as buckwheat will be a poor crop.

BELL L. DUNCAN.

Black Lick, Pa., Aug. 21.

MERCER'S SCALE-HIVE REPORT FOR 1890.

Inclosed you will find a report of my scale hive. This is the same one that was on the scales last year, with the same queen. It did not swarm, neither had it any help from any

APRIL.	GAIN IN POUNDS.	MAY.	GAIN IN POUNDS.
15	2	15	12
16	4½	16	16
17	1	17	18
18	0	18	10½
19	½	19	7½
20	0	20	6½
21	1	21	Fog—ext'd 65 lbs.
22	4	22	8½
23	4	23	12
24	4	24	13½
25	7½	25	10
26	4½	26	4—fog.
27	7	27	0—fog.
28	6	28	0—fog.
29	Cold, foggy. Loss 1½	29	7½
30	Cold, foggy. Loss 1	30	8
MAY.		31	3½
1	5½		
2	6½		
3	8	1	7½
4	6—ext'd 56½ lbs.	2	6½
5	10	3	7½
6	Fog. Loss 1	4	9
7	Loss 1½	5	10—east wind.
8	5½	6	5
9	0	7	2
10	3½	8	4
11	11	9	4
12	12	10	4½—ext'd 59 lbs.
13	16½	11	2
14	12—ext'd 68 lbs.	12	½
Total, 351 lbs.			

other hive. After June 12 they continued to gather from $\frac{1}{2}$ to 2 lbs. per day for about one

month. The hive weighed, when taken off the scales, July 20, 115 lbs. It is an ordinary 8-frame L. hive, with supers, each holding 7 frames.

L. E. MERCER.

Ventura, Cal., Sept. 2.

HONEY-FLOW GOOD.

The bees in this county nearly forgot to swarm this season. They were quite backward until the 15th of June, when they commenced to work. The honey-flow is good, but the bees are so cross we can hardly get along with them. If you can assign any reasons for their doing so when the pasture is good, I should be pleased to hear from you.

A. J. BELL.

Logan City, Utah, Aug. 13. 1890.

Friend B., the only reason I can give is, that the weather was cold, or else the pasture was not very good.

SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LOVE TO RAISE CROPS.

That art on which a thousand millions of men are dependent for their sustenance, and two hundred millions of men expend their daily toil, must be the most important of all—the parent and precursor of all other arts. In every country, then, and at every period, the investigation of the principles on which the rational practice of this art is founded ought to have commanded the principal attention of the greatest minds.

JAMES F. W. JOHNSTON.

USING CLOTH IN PLACE OF GLASS FOR HOT-BEDS, COLD-FRAMES, ETC.

A good many are making inquiries in regard to this matter, and they come to me, as I have had experience. At present we have only one bed covered with cloth; and if the money we have expended in cloth frames had been put in glass sash I should have been very much better pleased. They answer very well in the fall and spring to keep off frost, but for the snows of winter they do not answer at all. Suppose your cloth frames are covered with six inches of snow, converted into slush with a drenching rain. Under such circumstances the glass keeps its place all right, and is not harmed by the wet or dampness; but the cloth is soon made useless. Another thing, the cloth frames blow around unless fastened down, and this one thing has disgusted me with them. It is true, I might make them as heavy as one of the glass frames; but if I am going to do that, I think I should put in glass and have something substantial, and good for a lifetime, if properly taken care of. It is true, cloth frames are light to handle, and can be cheaply made, but they do not begin to keep out frost like tight, well-made sash. I have thought several times of having a cold-frame on the south side of some building, then have a cloth frame hinged on the north side, so it can be raised up and fastened against the building. This would keep it from blowing away, when they are down over the plants, or fastened up against the building, and might answer a very good purpose in the spring and fall.

One friend asks if there is any thing new that I have learned about greenhouses. Not much, unless it be this: We want a greenhouse so as to get every bit of sunshine possible. It should have a locality where neither trees nor buildings are going to obstruct the rays of the sun in the winter time. After we have secured every particle of sunshine possible, from sunrise to sunset, then I would make provision for securing the rains from above. Removing the sash, and letting the gentle rain come right down on the plants, is the best remedy that I know of for insects or disease. Besides this, if we wish

to push things in the winter time, of course we want to keep them warm. For this purpose I am rather inclined to steam-pipes. Somebody asks how flat it will do to have the glass. In hotbeds and cold-frames the sash are often so near level that there is only just incline enough for the water to run off. This is bad, however, late in the spring, when the sun comes nearly straight down, for the heat at noonday is tremendous if you forget to move the sash or open the ventilators. Houses running north and south, with pitch enough to the roof so the sun's rays can pretty nearly go straight through, morning and evening, give better results. In this case, when the heat is most intense about noon, the rays strike the glass at an angle. This equalizes the heat, giving us most of the sun's power morning and evening, and less at noon time. A more perfect arrangement would be to have one side of the house fronting the southeast, so the sun would shine straight through the glass, say at eight or nine o'clock in the morning; then have another side fronting the southwest, so as to have the same condition at three or four in the afternoon, and we should have it. Now, if these two sashes can be arranged so as to swing clear off against a couple of posts, to catch the rain whenever it comes, it would be my ideal of a greenhouse. A roof nearly flat saves glass; for the same number of square feet of glass will cover more square feet of plant-beds on a level, or nearly level, than any other way.

MOSS FOR PACKING PLANTS, COVERING SEEDS, ETC.

Friend Root:—If you are in want of moss, or should be any time in the future, write me for prices, as I think I can do better by you than heretofore; or I will refer you to other parties whom I have encouraged to gather a supply, thinking it would sell, thereby helping the party to add to his not over-large income. I have (of course) a desire to gather *money* when the opportunity offers, but I can be charitable only on a small scale, because of my circumstances: but I will do what I can.

Krumroy, O., Sept. 8.

C. H. WELCH.

The above comes from a friend who furnishes us our moss for packing strawberry-plants, covering seeds, and other work in gardening. We purchased 40 barrels of him last spring, and it answers the purpose the best of any thing we ever got hold of. Now, my reasons for publishing the above letter are to call attention to the fact that this moss may be found in many swamps and marshes, and should be utilized. It has been advertised in some of our seed catalogues as high as 50 cents a peck. As it can, however, be compressed into a very small space, it seems hardly fair to sell it by the peck or bushel; and as it usually contains more or less moisture, it can not well be sold by the pound. I would suggest, however, that, in order to save transportation charges, it be dried in the sun. It may then be sent cheaply by mail, freight, or express. The purchaser can moisten it to his liking. A pound of perfectly dried moss will go a great way, and makes quite a bulk: but in order to let you see what it looks like, and to start a traffic, we will offer it until further notice, at 5 cents per lb. If wanted by mail, add 16 cents for postage. Very likely some one can undersell me. In fact, I should

like to see the price go down to a cent a pound or less. But in our competition we should be careful to send a good clean article. Some time ago I purchased several barrels of peat and moss from Barnegat Moss Co., Barnegat, N. J. It was raked up without any sifting or sorting, some of the barrels even containing sticks a foot long. I wrote them, remonstrating: but all the satisfaction I received was that they sent me just such as they sent to everybody else. I notice that Mr. E. L. Roser, of Brittain, Summit Co., O., at the end of his strawberry circular, advertises it by the barrel for \$1.10. It is not only valuable to plant-raisers, but where it is very plentiful it is the nicest thing for bedding horses ever discovered, as it absorbs all the liquid manure, and the resulting compost is the nicest thing for greenhouses or plant-gardens that can be imagined. You can work it all up fine, and mix it with the dirt without any fermenting, or rotting at all. Our friend Eugene Davis, who gave us the Grand Rapids lettuce, says there is nothing better for raising lettuce in greenhouses than fresh horse manure broken up fine, and raked into the soil. Now to start this moss industry going, we will, in our next issue, give the names and addresses *free* of all those who are prepared to furnish dried moss at 5 cents per lb., and damp moss at a dollar a barrel, or less prices if they choose.

PLANTING STRAWBERRIES IN THE FALL.

Bro. Root:—One of your advertisers says: "Now is the time to set strawberries for next year's fruiting." Fiddlesticks! Everybody who makes a business of raising strawberries for market knows better than to set the plants in September for next year's crop; but those who have had no experience may be misled by such statements. Of course, if anybody wants to set a few plants in the garden by way of experiment, or simply for amusement or recreation, there is not much harm done; but it is not right, according to my way of thinking, to induce people to plant strawberries in the fall, with the expectation of marketing a paying crop the following season.

I could furnish you a nice lot of Haverland plants; but as my experience would not justify me in planting so late in the season, I will not sell any plants for fall planting, even if our honey crop is a total failure, and I must wear my old coat a year longer. S. P. YODER.

East Lewistown, O., Sept. 8.

Friend Y., you are, in the main, right. A person with little experience in strawberry culture certainly should not set out a very large extent of ground at *any* time of the year, unless he has some old hand to guide him. Of course, there may be exceptions, but this is the rule. Notwithstanding this, however, a skillful and experienced market-gardener can put out half an acre in August or even September, and get a partial crop next season. By the aid of the transplanting-tubes, if he has the plants on his own premises, or, say, if he can get them a few miles from his home, so he can go after them with a wagon, he can put them out in September or October, and have almost every

plant live. Of course, where we set out plants as late as October, they are to be treated as spring-set plants. The principal advantage will be, that you can do it oftentimes when you have more leisure. Another thing, there will then be no difficulty about getting in your plants early enough. We have put out strawberry-plants by taking up a lump of dirt with them, when we could not go to work in the morning because the ground was frozen. Toward noon it would soften up enough so that we could dig so as to put the plants in. These plants bore *some* fruit next year. I do not think we can too strongly emphasize the advice given, of starting small and enlarging as you acquire experience. The beginner will very soon know what he can do, without asking anybody. He should, however, avail himself as much as possible of the experience of others around him. But as soils, localities, and circumstances always differ, there is nothing like getting acquainted with your own surroundings. The earnest worker will soon get all these things under his thumb, as it were. We received 2500 Haverlands about ten days ago. Most of them were put in our plant-beds, about six inches apart. We shall not use them to fill orders until they have made new roots and new foliage, and are nice strong plants. The most of the plants that we are selling and putting up now are in lots of from 25 to 50. We get a few orders for a hundred; but the great bulk of our business in plants is for lots of ten—sometimes only five; that is, ten plants of each kind of all we raise, making forty in all. These, of course, are for garden culture, and probably few if any of our readers will make a failure in this line. Next season they will have plants of their own raising, to put in the field if they like.

Later.—Since the above was written, our boys have put out a strawberry-patch for my daughter, Mrs. Calvert, and another for my wife's sister, Mrs. Harrington. They were put out Saturday, Sept. 6. As I was very busy I did not superintend the work at all. The boys took them out of our plant-beds, and carried them across the road, and put them in mellow soil prepared according to my direction. They did not even use the transplanting-tubes. To-day, September 15, just nine days after, every plant out of the 600 (they had 300 apiece) is growing, and many of them are putting out runners. They look as fresh and bright, apparently, as those that have not been moved at all. Of course, we have had a very wet rainy spell: but such spells frequently happen in September. Now, these two strawberry-patches are going to bear a pretty good crop next season. I am sure of it, because I have had berries from plants set in September, more or less, every year for the past five or six years. One reason why we prefer to put out the plants in the fall is because we have much more time and ground to spare, and better facilities for putting the ground in excellent trim.

MOSS FROM THE SWAMPS FOR WINTER PACKING.

I send you a sample of moss. I have been using it for packing over my bees for three winters. I think it is a good material for that purpose. It is to be found here in Northern Iowa in quite large quantities in the sloughs, or "prairie ponds," and can be gathered in the fall of the year when very dry, and the water is all dried up from the ponds. It is found lying on the surface of the pond in a solid mat. I should say from two to four inches thick, and it can be gathered up with a pitchfork very easily. Understand, I have none of this moss to sell, but I think it could be gathered and shipped to dealers or to parties who wish to try it. This sample I send you is just as it grew on the pond, about two or three inches thick. It does not mold or mildew. I have some in my cellar, which I have had for three years, just as bright as it ever was. Bees have done poorly in this part of the country. I started this spring with 65 colonies. I got two swarms, but no surplus honey. It has been very dry this summer, but we have had plenty of rain of late.

Ackley, Ia., Sept. 5.

N. YOUNG.

Friend Y., I feel sure the moss you send will answer splendidly. It was several years ago mentioned as being used for packing chaff hives. The sample you send is not exactly like what we use for packing strawberry-plants, but I think it would answer exactly for the purpose. See what friend Welch has to say on the preceding page.

THE BUSH LIMA BEANS, ETC.

At present we are selling shelled beans on our wagon as follows: White kidney, 5 cts. per pint; bush Lima, 10 cts. per pint; and pole limas, 15 cts. per pint. There is not, however, quite so much difference as this in quality. The kidneys were put on the market long before the others, and people had become a little tired of them when the bush limas first came. Then they got a little tired of the bush limas, so that, when the great whoppers—the King of the Garden limas—came they were a novelty; besides, their enormous size made everybody want them. The bush limas are fully two weeks earlier than the pole limas. The Kumerle and Burpee's bush limas are none of them yet large enough for table use. I am inclined to think that the large bush limas will always be later than the pole limas (at least during a damp season, when they need more sun), and this is going to be rather against them. Our first bush limas brought 15 cts. per pint, but it was a pretty hard matter to sell many at that price. The King of the Garden has been selling at this figure for a week, all we could pick, and they never bring any back on the wagon. Had the ground not been so exceedingly wet, our Kumerles and Burpees would have been planted rather earlier. Last year the Kumerles were planted rather too early; but this year I fear I planted them rather too late. Although we have quite a little plot of Kumerles, I fear none of them will be mature enough to plant unless we pull the vines as we did last year, and let them ripen in the greenhouse.

SEEDS THAT CAN BE PLANTED IN SEPTEMBER IN THE OPEN GROUND.

First, cabbages, for setting in cold-frames later; Grand Rapids and Boston Market lettuce for the same purpose; winter onion-sets if you have not before; the same with spinach. In fact, it is a good plan to sow a lot of spinach once a week all through September. So much depends on the winter it will be hard to tell just what sowing will winter best.

OUR HOMES.

For I will give you a mouth of wisdom, which all your adversaries shall not be able to gainsay nor resist.—LUKE 21: 15.

A good deal has been said about the uncertainty of things pertaining to the life beyond. Unbelievers boldly challenge us to prove what we claim and believe; and as God has not seen fit to tell us very much about this unknown world beyond, we can not always answer their questions. In fact, I have often thought it just as well *not* to say very much. Then the question arises, "Have we, after all, any well-defined faith or sure grounds for believing there is a hereafter at all?" The text before us this rainy morning (at least it is a rainy morning here in Medina), however, gives us the promise that we shall be supplied with wisdom sufficient to answer all our adversaries, and that they shall not be able to gainsay nor resist the truth we shall be able to present to them. And now, dear friends, I have chosen this text for our talk to-day, because I feel that I have something in my possession that none of you will be able to gainsay nor resist. I do not mean in the way of argument, for it is too sacred and solemn a thing to argue about. But I feel in my heart that you will not *want* to gainsay nor resist what I have to present before you. Most of you are my personal friends; and even if you are not, I am sure you are open to reason and justice.

We have been having quite rainy weather. From reports, I judge that it has been rainy almost everywhere. We are so much in the habit of expecting a drought during the last of August and first of September that it seems a little funny to find the ground so wet that one can scarcely step on it, and to long for sunshine as we often do in January and February. It has been raining more or less every day for a week; and after it rained steadily for so long, and we felt pretty sure that it was going to let up, it just turned in and rained harder and harder. I was up in the morning before it was quite daylight, as usual. Notwithstanding the rain, I looked over all the buildings, outdoors and in, to see if the water was doing any damage. Although we are up above low ground, we have had considerable trouble at different times by water coming into our basements; and in our efforts to carry the water away, sewer-pipes and tile have been laid so thickly under our grounds that one can hardly dig anywhere without striking them. In the progress of our new building, many of these old outlets for water are turned up; and as it was during the month of August, no one expected water enough to do harm, even if they were not just then properly connected again. Well, I went around into all the basements, and had the satisfaction of finding them all dry, sweet, and clean. No rush of waters pouring in greeted my ears or eyes. We have had in times past so much of this kind of work—water covering the basement floors, damaging goods, setting things floating, etc., and then leaving a disagreeable, damp, moldy, musty smell for weeks afterward that I had got pretty thoroughly roused up about it. As an illustration of some of my trials, let me relate a little circumstance.

I think it was in the month of June. After dinner my wife passed down through the wax-room and out through the machine-shop. A very heavy thunder-shower was under way, and she came rushing to me a good deal out of patience. She said the water was pouring into the door of the machine-shop like a small mill-race, and half a dozen men were standing

around, laughing to see it come in. I was down there in no time, and gave them some pretty sharp reproof about not stirring themselves when they saw the damage to property that was going on. Some of them excused themselves by saying that they did not work in that room—they were only passing through after dinner. Others said they did not know what to do.

"Here! follow me," said I. Shovels and pickax were right in sight. There had been some changes made in the railroad track in front of the door, allowing the water that came down the ditch to come straight into the door instead of following its accustomed channel. With my hands and such tools as I could grasp hastily I commenced damming up the water. With three or four to assist me, in less than five minutes the water was stopped, and turned where it ought to go. Then with scoop-shovels and saw-dust from the adjoining room we had the water removed. But the floor was soaked, and a good deal of water had got under it; and it is not at all strange, that soon after, the Health Commission pronounced that apartment unwholesome. You can readily understand from the above why it is that I become pretty vehement when anybody by heedlessness lets water into any of the lower rooms. Please let us now go back to the morning in question.

I felt happy to think that every thing was safe and sound. I assisted in getting the market-wagon off, and then went to breakfast. After breakfast it began to rain still harder, and I discovered that a large reservoir we are making to supply a steam-pump for fire purposes had caved in on one side, and the outlet was stopped. When the workmen were digging the reservoir, I was assured that the water-conductor from the roof of the saw-room was securely fixed so as to carry away any water in case of rain. And not only was the outlet stopped, but the horses had evidently backed the wagon against this temporary water-pipe, and it was thrown out of place. The water from the roof of the large factory was pouring into the reservoir, endangering the walls that supported our steam-boilers. At such a time I generally fix my mind on some special man who knows how to do the work under consideration. My special man had not come, and, in fact, nobody was around who would be of any particular use in such an emergency. It wanted somebody with rubber boots and waterproof coat. I soon found one man to help me: but before the outlet was opened, the rain became so severe that it was filling up the cellar of the new building also. Finally, to my great relief, one of the men I wanted came around quite leisurely, asking me if there was something I wanted him to do. I felt provoked that he should ask such a question. But I kept the feeling down, and pleasantly told him what was wanted. Before the passage was fairly opened here, I found that the water was going into the basement of the *saw-room* building. It was the old story over again. A big stream was pouring in, and the baskets and other things were beginning to float about. I felt as if I could *not* have this floor soaked up with water again. I could not wait for rubber boots nor for rubber coat: in fact, I do not often have such things of my own, because I lend them to somebody before I have had them a week. I found a couple of men, and gave them some shovels, and told them to stop the water from going into the basement.

"Well, how shall we stop it?"

"Cut a little ditch hastily, and carry it along outside, instead of letting it run *toward* the building."

"But we can't make water run *up hill*," remarked one, by way of objection, while he stood still with his shovel, out in the rain.

"Yes, we *can* make water run up hill, if you will do exactly as I tell you," said I. Then the other one objected that it was all loose chips and sticks, and said the water would all run through it if used to make a dam. Oh! why couldn't these friends in this emergency, when the water was pouring into our basement, have a little more confidence in my wisdom and judgment? Why did they not reflect that I should never have had charge of all this property and these buildings had my judgment not been at least *tolerably* good? I did not say any thing, but went out and took hold of the tools myself, and showed the one who said that water would not run up hill, that, by raising the embankment high enough, we could make it fill the depression and go over the higher parts. The one who said sticks and chips would not stop water was directed to take some soft mud out of the road and plaster the sticks and chips until they would hold water. Mud was in great plenty, and as soft as butter; and it did not take two minutes to "butter" over the porous material so it carried water nicely, and in five minutes more we had a big muddy stream going off beyond the building to a place of safety. How much can be done with a hoe and spade and shovel, in a crisis like this, if you only have a man who is expert in their use! I love tools; and I especially love hoes and spades and shovels. I love the man who is expert in their use; and I have sometimes felt like raising my hat in respect to the man who knows how to handle and is an expert with a spade. Why, the minute he takes hold of one I can tell whether or not he knows what a spade is for. I ran down into the basement, and was rejoiced to see the water had every bit stopped. Then we rushed over to the new building, and found the same state of affairs there. The water was going down the open hatchway like a small millrace. I called for some more hands to make a dam and carry it off. It was just as before—they stood out in the rain and objected, not doing any thing until I grasped the hoe and showed them how. One man said we should have to dig down *three feet* to keep the water from running into the building. I presume they forgot I had played with water almost all my life, and that I had watched irrigating ditches along the sides of the mountains in California and Arizona with an intense interest that ordinary people know but little about. I know pretty well what can be done with water. In less than one minute a great part of the flood that was going into the hatchway was turned off over the ground. Of course, it very quickly made a little pond there: but that was a better place for a little pond than around the foundation stones of the new building. In fact, the water was a foot deep there already. The rain was so great that the ordinary outlets were insufficient, especially while shavings and sticks were obstructing them. Well, before this little pond had got over its environments, back to the building again, a little ditch was hastily made where it seemed most inclined to break over, and in ten minutes we got it away from the building, and in no spot did we dig more than six inches. The outlet of the reservoir had by this time caved in again, and that was rapidly filling. The man who opened it the first time, and who knew just how, could not be found, so another one had to be instructed where to find the tile, and how to manage so as to prevent the mud from being washed into it. Just then I remembered the printers were on the last page of the strawberry book, and, in fact, it was already on the press. I had been in the office once or twice to see about it; but owing to the excessive rain, nobody had yet come around to whom I could give orders. When I did remem-

ber it, it worried me a little. Sure enough, in some way the impression had got out that I was through with my corrections, and it was in the press, and several hundred impressions had been run off. I had kept level until about this time, and then I fear I scolded some. There was nothing amiss, however, except some omissions in a part of the index; and if you find that a part of it is a little out of "whack," as some friend expressed it, you will know how it came about. The press was stopped, and I sat down to finish the page where I left off the night before. The water was dripping from me all over, and running away down into my shoes. In fact, my hat was so soaked that the water kept running down my cheeks and running from the end of my nose on to the strawberry book I was trying to read, until I pulled my hat off, and then the draft was too severe on my bald head. I got the page finished, however, and went back to look after the water. One of the men I wanted could not be found anywhere. At last he turned up away down across the creek, letting the water off from the *celery*. When asked how he came to go off there, he said it was because I told him to. After we got the water stopped from going into the basement, I told him to help let the water off from the *cellar* of the new building. I suppose I stopped at the word "cellar," so many things were crowding me all at once, and he said he understood me to say "celery," and so put away off to the creek bottom (with his rubber boots and coat), where almost the whole ground was submerged. If there is any thing that will bear unlimited quantities of water without injury, it is celery.

I have for some months rather held back and objected to the new improvements that have been started. I wanted to have the new building put off till another year. The reservoir, with its attendant steam-pump, I objected to also. One reason why I objected to it was, I knew it must bring added responsibilities which I did not feel able to bear. But the boys, in their enthusiasm, explained that these things were urgently needed, and will be an excellent investment. If we are going to have them, the sooner the better. They propose to take the responsibility off from my shoulders—at least a part of it, and look after things. I presume this rainy morning must have been a good time to sleep—at least, nobody seemed to be in much haste in getting around, and it is not to be wondered at that I became a little cross and impatient. I did not say much out loud, but I declared mentally that things had got to come to a standstill until we could get ready to do every thing "decently and in order." (The last is Bible teaching, but you know Satan can quote Bible tiptop.) I did not realize that I was getting into a bad and unchristianlike frame of mind. A little incident, however, reminded me of it. Somebody came along quite leisurely, and pleasantly wished me a "good-morning. Now, just at that time the "good-morning" did not hit me just right. Wet and dripping as I was, and tired out, it seemed to me that there was no time for "good-mornings." I answered back pleasantly, because I knew it was my duty. But—shall I dare tell you what was in my mind? I think I will, that you may get a glimpse of the battles that your old friend has to fight. Instead of saying good-morning back to him as is every Christian's duty, no matter what is under the surface, Satan (I think it was) suggested that it would give me rare pleasure to throw a club at his head. I shouldn't want a very big club, I think, but I felt just spiteful enough at everybody and every thing, especially those who looked smiling and happy. Perhaps some of you begin to inquire, "Why,

Bro. Root, where was that little prayer of yours—that warning note that you tell us comes to remind you that danger is near?"

Well, it did come just about then, and it was needed, and I prayed earnestly to be lifted from the slough of despond into which I seemed to be sinking; and it was the answer to this simple prayer—a quick swift answer—that has prompted me to tell you all I have been telling you this morning. You see, I had got into a way of thinking that I was an abused and injured individual. Were you ever there, my friend? And I was saying mentally that I was not going to bear everybody's burdens *any longer*; and the answer seemed to be a reply or rebuke or reproof to this attitude of heart. It came in the line of a couplet of the hymn I have been singing so much of the time during the past two weeks. You will find the hymn on page 647 of our last issue. Here are the two lines that Christ Jesus held up to me: 

 I'll bear the *toil*, endure the *pain*,
 Supported by thy word.

 Come to think of it, there *had* been considerable "toil," but not much pain; and then I remembered to thank God, not only for energy, but for strength and endurance to stand such a wetting without injury. Some of you may say that such a wetting is dangerous. No, it is not—at least not to A. I. Root. If I do not get chilly after getting wet, it does not hurt me a particle. The last words of the lines, "Supported by thy word," seemed to suggest something just then; and then my thoughts ran in line with the Savior's work here on earth; and that old favorite text of mine that has been music in my ears for so long came out sharp and clear, "Not to be ministered unto, but to *minister*." Why, it is worth all my experience that morning to have such a bright and vivid practical application of this wonderfully inspiring text, to the true, faithful follower of Christ Jesus. I was out of the mud and miry clay in no time—that is, I was out spiritually. My feet were still in my mud-soaked shoes, and the water was soaking through my hat, saturating the few gray hairs that remain. Drops of water were still on my nose and clothing, but what did it matter? Christ's promises were ringing through my soul, and a great happiness came over me. I took up my old hymn, and it never sounded so sweet before—"Am I a soldier of the cross?" I felt glad that I could answer that I *was* (or at least trying to be), and that I had just withdrawn from a hand-to-hand conflict; and then came the words, "Must I be carried to the skies on flowery beds of ease?" I answered at once, "No, no. Let me rather 'bear the *toil*' and 'endure the *pain*,' if, by so doing, I can feel the Master's presence by my side, and my hand in his." "Are there no foes for me to face?" Well, I think there are a *few*—at least, judging from past experience. "Must I not stem the flood?" Well, well. We *had* stemmed one "flood" evidently, and had come off victorious; and A. I. Root all by himself stemmed another little flood, and he, too, came off victorious, and is now rejoicing.

A word about catching cold. Dear friends, I never catch cold or come to harm of any kind when the blood is coursing through my veins stirred by the enthusiasm of love for Christ Jesus and humanity in general. When I went over at 11 o'clock to take my usual nap I did fear the consequences of lying down with my clothing so damp; therefore I put my feet into the oven just a minute. My wife says she is sure I did not have them there more than *half* a minute. Then I slept half an hour, and awoke rested, well, and happy.

We were planning to get off the strawberry book that day; and it seems to me, as I look

back, that I never saw work go along so rapidly and pleasantly before. I told them we wanted a certain number before 3 o'clock. I presume I looked pleasant and happy, and I guess the spirit in my heart must have been contagious, for everybody seemed to catch the spirit of enthusiasm in getting the books mailed. It did not occur to me that any of the friends around me cared particularly for a book on strawberries, and I was greatly pleased when the foreman asked how much I would charge them if all the printers, clubbed together and took one apiece. I looked up in astonishment. Said I, "Why, bless your hearts, boys, if you will read the book through you shall all have one without cost, with the compliments of the author and publisher." Pretty soon the office girls heard of it, and wanted to know if they were included; and it gave me additional pleasure, not only to supply them on the same terms, but every one else in our employ.

I have sometimes thought that these texts that burst suddenly upon us, or the memory of these old hymns, braces up the Christian something like martial music in a battle. I have heard that, when an army was demoralized, and the foe fast gaining the ascendency, the sound of the drum and fife, with some familiar inspiring air, would of itself rally the demoralized forces, and give new courage to the soldiers, to such an extent that they would turn round and gain a victory, even when, to all appearance, the cause was hopelessly lost. Now, the Bible promises, and these old hymns that have been almost a battle-cry against evil for ages past, operate in just the same way. Only a few hours before, I felt like throwing a club at the one who bade me good-morning. What a change just the little text and the lines of the hymn had brought! The events of the morning had been only a wholesome school or drill to me. After I had come out victorious over a wrong spirit, it seemed as if the dear Savior delighted to pour out his spirit upon my soul in a way he had never done before. As I passed around from one to another of my helpers, they never looked so good and so lovable as they did then. First I inwardly thanked God for giving me a certain one to be a companion and a helper. Then I discovered that his next neighbor had also grand and noble qualities; and so on it went from one to another, all over the establishment. Even old Charlie, who draws the market-wagon, by the light of the new joy that was filling my soul seemed a grand, good old faithful servant, notwithstanding some of his notions and queer ways. I told my wife that such joy and peace and thankfulness seemed *too good* for any human being, and it almost made me tremble to think that I should probably lose it very soon by some foolish act. I could not but remember the lines:

O Beulah land, sweet Beulah land,
As on thy highest mount I stand,
I look away across the sea,
Where mansions are prepared for me,
And view the shining glory shore,
My heaven, my home for evermore.

And then that last verse:

The zephyrs seem to float to me
Sweet sounds of heaven's melody,
As angels, with the white-robed throng,
Join in the sweet redemption song.

Well, dear friends, I did stand on the "mount" for nearly two whole days; but I came down with a tumble finally. It was not a very big tumble, however, and I soon clambered back pretty nearly but not quite where I had been. I presume it is not well for us to stand away up entirely clear of Satan's clutches *all* the time. If we did, we might lose charity for those who are tempted and fall, worse than we

do. Once in a while the dear Savior thinks best to let us catch a little glimpse of heaven through the clouds, and then he bids us go back to earth to bear the *toil* and endure the *pain*. And now, dear friends, to the point of our text:

This world is full of those who are tempted sorely, and tried sorely. Almost every one whose eyes rest on these pages, especially if he has tried to be a Christian, will remember just such conflicts by the score, as I have told you about to-day. Our daughter Constance, or "Blue Eyes," as I have called her, took the train last evening to go away for the first time in her life from the parental roof. She has gone to Oberlin to school. The first number of GLEANINGS that ever saw the light came from the press on her first birthday. She is almost 18 years old, and so is GLEANINGS. We feel very anxious that she should go through college and finish her education. In many respects she is like her father, and will have the same kind of battles to fight. I fear, however, she is a little more prone to give up and become discouraged. Now, what will help her? What will be the most helpful to any poor soul when it comes to bear life's struggles, and to fight life's battles? Why, there is nothing in the whole wide universe like the religion of Christ Jesus. There is nothing at all to compare with it. Think of the text, "Not to be ministered unto, but to minister," to pin to your banner when you need help, and then the words of the old hymn right in the same line, "I'll bear the toil, endure the pain." It is not only boys and girls who become discouraged and give up, but it is grown-up men and women. It is not only those who are struggling against poverty, but those who have their *thousands* have the same battles to fight. Somebody has said that prosperity is harder to bear than poverty. Suicides are occurring constantly. Look at the papers. Human beings, with God-given powers and great gifts and capabilities, are giving way to evil passions, and going down to shame and ruin. What is there to be compared with the religion of Christ Jesus to help one to bear up? Have you a friend, a brother or sister, or son or daughter away from home, battling with life's dangers? What would you *give*, my friend, to know that this loved one, this relative, was at this moment holding fast to some Bible text like the ones I have quoted, or gaining new courage from some old hymn that bids him—nay, inspires him—to fight on, as a humble soldier of the cross?

May God bless the words of my text to-day; and may the divine influences of His Holy Spirit help to make my meaning clear. And may the grand and glorious thought (which I have *tried* to give you in my poor way) come home to *your* heart in such a way that not all the adversaries of Christ Jesus (with Satan himself included) shall be "able to gainsay nor resist" the great truths—truths to be found only in that book that tells us of Him who came to *minister* and *not* to be ministered unto.

EDITORIAL.

Whosoever will be chief among you, let him be your servant.
—MATT. 20: 27.

GLEANINGS ENLARGED.

WE find, upon changing our body type for GLEANINGS, that we have not only enlarged the face of the type, but actually added nearly one-fourth to the amount of reading-matter, without adding to the amount of paper. This seems

like a paradox; but the gain is made from the fact that the new type is set more compact.

A GOOD HONEY-YIELD IN CALIFORNIA.

ON page 679 we have a report of a hive on scales. It seems this season our California friends have had a continuous flow of honey from the middle of April till about the middle of July; and at one time the amount reached the nice record of 18 lbs. in a day. If all this great yield is equal to the sample sent us by friend Mercer, he ought to be a happy man. A carload of the same kind is now on the way from Ventura to Medina.

LOSS, DAMAGE, AND MISCARRIAGE BY RAILROAD AND EXPRESS COMPANIES—WHO IS RESPONSIBLE?

DURING the past season there has been much trouble, first and last, in the above line; and quite a few with whom we have deal insist that we shall bear *all* responsibility. In consequence of this we have been obliged to have printed on our invoice sheets the following:

Our responsibility ceases when goods are received for in good order by the railroad or express company.

We do not mean by the above that we are unwilling to make every possible effort to look up lost goods, or have damages collected in case the goods can not be found. But we mean this: We can not send the money back, even if the goods should be weeks or months on the way. I know there are some kinds of business where it is possible to guarantee safe delivery. Some seedsmen do this; but seeds are usually small in bulk and light in weight; and when a seedsman says he will take all risks of all kinds, he usually has a profit that will enable him to do so. With our business, however, it is different; for we sometimes sell honey at a profit of only half a cent a pound. In this case there is no margin for us to take responsibilities that do not belong to us. If the goods are delayed because of any blunder of ours in directing them, or because they were poorly packed or poorly made, then, of course, we must stand the consequences (whether we can afford it or not); but to attempt to shoulder and make good all the results of carelessness and inefficient work with the great transportation companies of the world, does not belong to us. Now, quite a few worry and borrow trouble needlessly when goods do not come to hand promptly, taking it for granted that their money is all lost and gone. Everybody should know that all transportation companies are responsible. If they lose your goods, or smash them by their own carelessness, they must make it good. The laws of our land insist on it; and if the companies do not do that, they will have to stop doing business. The most annoying thing about it, however, is that they are permitted to take their own time. Sometimes it takes us a whole year or even more to get pay for lost goods; and on this ac-

count we frequently tell our friends who are suffering for the need of something that does not turn up, that we will fill the order again, and send more goods right on, providing the consignee will agree to take both shipments if both should come to hand. Express companies are liable for unreasonable delay in delivering goods; and I suppose that railroad companies are also liable to some extent for every *unreasonable* delay. Now, if the position we take is in any respect unfair or unchristianlike, I stand ready to be set right.

SPECIAL NOTICES.

PRICE OF BEES AND QUEENS.

The price advances in October to July prices. Untested will then be \$1.00; tested, \$2.00; select tested, \$3.00. We ran out of imported queens within the last few days, but are daily expecting a fresh importation. Prices will be four, five, and six dollars respectively. *Later.*—Imported queens are here.

HONEY JUMBLES AND CAKES.

We have just sold to a large bakery the off grades of honey received from Arizona, to be used in making honey cakes and jumbles; and we take some of these in exchange for the honey. We learn that this bakery alone is using about 4 bbls. of honey daily for honey cookies, and they are having such a big trade they are running night and day, and still behind on orders. If any of our readers have any off grades of honey that don't find ready market at a fair price, please send us a small sample, naming the quantity you have, and how it is put up, and the least you will take for it. We will try to find you a market. The honey jumbles are the same that we sold two or three years ago, and are worth \$2.00 a box of about 14 lbs. Any less quantity will be 20 cts. per lb. The honey cakes have only about half the quantity of honey in them, and are sugar-coated. Price \$1.50 per box, or 15 cts. per lb. for a less quantity. We will mail a sample package of either, put up in a sample pasteboard box or section carton, postpaid, for 10 cents.

PLANTS THAT MAY BE PUT OUT IN THE FALL.

During the last of September and first of October is an excellent time to set out a good many kinds of plants. Asparagus will do nicely. Raspberries, blackberries, and currants, will also get well settled for winter. If the soil is very heavy clay, it may be best to mulch them to prevent the frost from throwing them out. Last, but not least, I would put out a few of such kinds of strawberries as I wished to test. The strawberry is peculiar, inasmuch as you can force it just as late in the fall as you please, by cultivation and manure; and no matter how sudden severe weather sets in, it does not seem to harm it at all. I have never seen any harm to strawberries from severe winters unless it is the heaving out by the frost, and this seldom happens with plants that get well rooted. Judicious mulching will prevent it entirely. In consequence of the recent heavy rains, we have had an abundant supply of the plants we have advertised, and we can also furnish, in limited quantities, to those who may wish to test them, the Crescent, Cumberland, Louisa, Belmont, Miami, and Sharpless. The price of all strawberries from this time until further notice will be 15 cts. for 10, or 75 cts. for 100; if wanted by mail, add 5¢ for 10, or 25¢ per 100. Jessie, Bubach, Haiverland, and Gandy, we expect to be able to supply all demand for until the ground freezes so as to hold them fast. The others will not last very long.

WHITE COMB HONEY FROM MATTHIAS SCHNEIDER, JR.

The comb honey mentioned in this department in last number of *GLEANINGS*, reached us just three days ago, as we write this, and to-day we are shipping the last pound of it, and haven't enough to fill orders. We don't see any prospect of having more in stock for two or three weeks, although we may get some before that time. This honey from Mr. Schneider is about the whitest honey we ever saw,

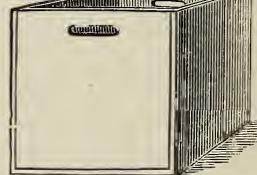
and it came in the best shape of any shipment we ever received. I believe there was not a case leaking in the whole lot of over 300 lbs.; and the secret is, it was crated up in crates of about 200 lbs. weight, with handles projecting from each end to carry it by. Nine 24-lb. cases, or 18 12-lb. were put into a crate which consists simply of a frame of pieces $\frac{1}{2}$ by 3 or 4 inches. In the bottom of the crate the cross-pieces running the shortest way are on the outside, and on top of these are some thin boards nailed between the outside strips, making the bottom nearly tight. On this is spread straw from one to two inches deep for the cases to rest on and receive the jar if the crate should be dropped. A similar method of crating honey was described by J. A. Green, May 1st No., first article. It seems to have proven such a great success wherever tried that we would advise bee-keepers not to ship any more honey to market in small quantities without putting it up in similar crates. You will save, in better price received for honey, a good many times the cost of these crates.

1890 ITALIAN QUEENS FOR BUSINESS.
18tfdp W. H. LAWS, Lavaca, Ark.

POTATO-BOXES

GALVANIZED BOUND.

(TERRY'S).



These are made of basswood, bound with galvanized iron. The galvanized iron gives strength, and the basswood strength and lightness. These hold exactly a bushel when level full, and may be piled one on top of another. Although they are made especially for potatoes, they can be used for fruit, vegetables, picking up stones on the farm, and a thousand other purposes. When piled one above the other, they protect the contents from the sun and rain; and from their shape a great many more bushels can be set into a wagon than where baskets are used. They are also much more substantial than baskets.

Price, nailed up, 25¢ each; 10, \$2.25; 100, \$20.00.

In the flat, including nails and galvanized iron, Per pkg. of 1 doz., 2 nailed and 10 packed inside, \$2.10; 10 pkgs., 5 per cent off.

SLATTED POTATO-BOX

As the pieces of which the above are made are mostly from remnants of basswood used in making sections, we can furnish them nailed up for 20 cents each; 10 for \$1.85; 100, \$16.00. Material in the flat, including nails, in packages of 12 boxes each, at \$1.50 per package, and each package includes two of the 12 boxes nailed up, complete. Ten pkgs., 5% off.

Please be careful in ordering to say whether you want the galvanized bound or the slatted boxes.

A. I. ROOT, Medina, Ohio.

LITHOGRAPH LABELS

In 12 Colors, at \$2.00 per 1000.

The 12 colors are all on each label. They are oblong in shape, measuring $2\frac{1}{2} \times 2\frac{1}{2}$. They are about the nicest labels we ever saw for glass tumblers, pails, and small packages of honey. We will mail a sample, inclosed in our label catalogue, free on application, and will furnish them postpaid at the following prices: 5 cts. for 10; 35 cts. for 100; \$1.20 for 500; \$2.00 for 1000. **A. I. ROOT, Medina, O.**

GLEANINGS IN BEE CULTURE.

Books for Bee-Keepers and Others.

Any of these books on which postage is not given will be forwarded by mail, *postpaid*, on receipt of price.

In buying books, as every thing else, we are liable to disappointment, if we make a purchase without seeing the article. Admitting that the bookseller could read all the books he offers, as he has them *for sale*, it were hardly to be expected he would be the one to mention all the faults, as well as good things about a book. I very much desire that those who favor me with their patronage shall not be disappointed, and therefore I am going to try to prevent it by mentioning all the faults so far as I can, that the purchaser may know what he is getting. In the following list, books that I approve I have marked with a *; those I *especially* approve, **; those that are not up to times, †; books that contain but little matter for the price, large type, and much space between the lines, ‡; foreign, §. The bee-books are all good.

BIBLES, HYMN-BOOKS, AND OTHER GOOD BOOKS.

8 Bible, <i>good print</i> , neatly bound.....	25
10 Bunyan's Pilgrim's Progress**.....	35
6 First Steps for Little Feet. By the author of the Story of the Bible. A better book for young children can not be found in the whole round of literature, and at the same time there can hardly be found a more attractive book. Beautifully bound, and fully illustrated. Price 50c. Two copies will be sold for 75 cents. Postage six cents each.	
5 Harmony of the Gospels.....	35
3 John Ploughman's Talks and Pictures, by Rev. C. H. Spurgeon*.....	10
1 Gospel Hymns, consolidated Nos. 1, 2, 3 and 4, words only, cloth, 10c; paper.....	05
2 Same, board covers.....	20
5 Same, words and music, small type, board covers.....	45
10 Same, words and music, board covers.....	75
3 New Testament in pretty flexible covers.....	05
5 New Testament, new version, paper cover.....	10
5 Robinson Crusoe, paper cover.....	20
4 Stepping Heavenward*.....	18
15 Story of the Bible**.....	1 00
A large book of 700 pages, and 274 illustrations. Will be read by almost every child.	
5 The Christian's Secret of a Happy Life*.....	25
8 Same in cloth binding.....	50
1 "The Life of Trust," by Geo. Muller**.....	1 25
1 Ten Nights in a Bar Room, by T. S. Arthur*.....	03

BOOKS, ESPECIALLY FOR BEE-KEEPERS.

As many of the bee-books are sent with other goods by freight or express, including no postage, we give prices separately. You will notice, that you can judge of the size of the books very well, by the amount required for postage on each [Price without postage.]	
15 A B C of Bee Culture. Cloth.....	1 10
5 A Year Among the Bees, by C. C. Miller ..	45
14 Bees and Bee-keeping, by Frank Cheshire, England, Vol. I, §.....	2 36
21 Same, Vol. II, §.....	2 79
or, \$5.25 for the two, postpaid.	
Bees and Honey, by T. G. Newman	1 00
15 Cook's New Manual. Cloth.....	1 35
5 Doolittle on Queen Rearing.....	05
2 Dzierzon Theory.....	10
1 Foul Brood; Its management and cure; D. A. Jones	09
1 Honey as Food and Medicine.....	5
10 Langstroth on the Hive and Honey-Beet.....	1 40
15 Langstroth Revised, by Ch. Dadant & Son	1 85
10 Quinby's New Bee-Keeping.....	1 40
10 Queen-Rearing, by H. Alley.....	1 00
4 Success in Bee Culture, by James Heddon	46
The Production of Comb Honey, by W. Z. Hutchinson.....	
The Apairy; or, Bees, Bee-Hives, and Bee Culture, by Geo. Neighbour & Sons, England.	1 75
British Bee-keeper's Guide - Book, by Thos. Wm. Cowan, Esq., England.....	40
3 Merrybanks and His Neighbor, by A. I. Root	25

MISCELLANEOUS HAND-BOOKS.

5 A B C of Carp Culture,*.....	35
3 A B C of Potato Culture, Terry**.....	35
This is T. B. Terry's first and most masterly work. The book has had an enormous sale, and has been reprinted in foreign languages. When we are thoroughly conversant with friend Terry's system of raising potatoes, we shall be ready to handle almost any farm crop successfully. It has 48 pages and 22 illustrations.	
5 An Egg-Farm, Stoddard*.....	45
Barn Plans and Out-Buildings*.....	1 50
Cranberry Culture, White's.....	1 25
Canary Birds; paper, 50c; cloth*.....	75
Draining for Profit and Health, Warrington.....	1 50
5 Eclectic Manual of Phonography; Pitman's System; cloth	50
6 Fuller's Practical Forestry*.....	1 40
10 Fuller's Grape Culturist*.....	1 40

10 | Farming For Boys*..... 1 15
This is one of Joseph Harris' happiest productions, and it seems to me that it ought to make farm-life fascinating to any boy who has any sort of taste for gardening.

7 | Farm, Gardening, and Seed-Growing**..... 90
This is by Francis Brill, the veteran seed-grower, and is the only book on gardening that I am aware of that tells how market-gardeners and seed-growers raise and harvest their own seeds. It has 166 pages.

10 | Gardening for Pleasure, Henderson*..... 1 40
"While Gardening for Profit" is written with view of making gardening Profitable; it reaches a good deal of the pleasure part, and "Gardening for Pleasure" reaches this matter of beautifying your homes and improving your grounds, without the special point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations.

12 | Gardening for Profit, new edition*..... 1 85
This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 134 cuts.

1 | Gardening for Young and Old, Harris**..... 1 25
This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young people as well as old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 187 pages and 46 engravings.

10 | Garden and Farm Topics, Henderson*..... 75
Gray's School and Field Book of Botany..... 1 80

5 | Gregory on Cabbages; paper*..... 25

5 | Gregory on Squashes; paper*..... 25

5 | Gregory on Onions; paper*..... 25

The above three books by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

10 | Household Conveniences..... 1 40
2 | How to Propagate and Grow Fruit, Greer*..... 25

5 | How to Make Candy*..... 45

2 | Injurious Insects, Cook..... 25

10 | Irrigation for the Farm, Garden, and Orchard, Stewart..... 1 49
This is a good, far and away informed, it is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks, or windmills, to take the place of rain, during our great droughts, is the great problem before us at the present day. The book has 274 pages and 142 cuts.

10 | Money in the Garden, Quinn*..... 1 40

3 | Maple Sugar and the Sugar-Bush**..... 35

By Prof. A. J. Cook. This was written in the spring of 1887, at my request. As the author has, perhaps, one of the finest sugar-camps in the United States, as well as being an enthusiastic lover of all farm industries, he is better fitted, perhaps, to handle the subject than any other man. The book is written in Prof. Cook's happy style, combining wholesome moral lessons with the latest and best method of managing to get the finest sugar and maple syrup, with the least possible expenditure of cash and labor. Everybody who makes sugar or molasses wants the sugar-book. It has 42 pages and 35 cuts.

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Peach Culture, Fulton's..... 1 50

10 | Profits in Poultry*..... 90

2 | Silk and the Silkworm..... 10

10 | Small-Fruit Culturist, Fuller*..... 1 40

10 | Success in Market-Gardening*..... 90
This is a new book by a real live, enterprising, successful market-gardener, Mr. Hayes of Arundel, a suburb of Boston. Mr. Hayes has been one of the foremost to make irrigation a practical success, and he now irrigates his grounds by means of a windmill and steam-engine whenever a drought threatens to injure the crops. The book has 208 pages, and is nicely illustrated with 110 engravings.

1 | The Silo and Ensilage, by Prof. Cook, new edition, fully illustrated..... 20

5 | Strawberry Culturist, Fuller*..... 20

Talks on Manures*..... 1 75

This book, by Joseph Harris, is, perhaps, the most comprehensive one we have on the subject, and the whole matter is considered by an able writer. It contains 366 pages.

2 | The Carpenter's Steel Square and its Uses; Hodgson; Abridged..... 15

10 | The New Agriculture, or the Waters Led Captive..... 75

2 | Treatise on the Horse and his Diseases..... 10

3 | Winter Care of Horses and Cattle..... 40

This is friend Terry's second book in regard to farm matters; but it is so intimately connected with his potato-book that it reads almost like a sequel to it. If you have only a horse or a cow, I think it will pay you to invest in the book. It has 44 pages, and 4 cuts.

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